COTTON

NOVEMBER, SERVING THE 1939

Textile Industries

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PERIODICAL DIVISION

HOSPITALIZATION IS A GREAT PLAN . . .

BUT IS IT ENOUGH?

As one of the pioneers in writing hospital plans for over a decade, we heartily commend the nationwide interest centered in recent months upon hospitalization plans.

However, attention should also be directed to the advisability of *complete* Group Welfare plans for employees . . . plans that embrace not only hospitalization, but surgical benefits, death benefits, coverage for loss of time, and for death in employee's family.

It is such a combination of well-rounded coverages that usually meets the modern welfare problems in a given plant.

Provident Plans are "made-to-measure" plans, devised for your employees, and arranged without cost to you, the employer, other than permitting payroll deductions.

PROVIDENT LIFE AND ACCIDENT INSURANCE COMPANY

CHATTANOOGA, TENNESSEE

SPECIALISTS IN GROUP WELFARE PROTECTION PLANS FOR OVER A HALF CENTURY

ALL LINED UP . . .

. . . against SALT CORROSION

What is the most common cause of corrosion in dyehouse equipment? Just the *common* salt you put in your dye tanks. So when you put salt in, make sure you put it into Monel. • Against Monel, salt and brine are well-nigh powerless. This strong, tough metal resists their destructive attack. It *cannot* rust, and it stands off corrosion for years. That is why you find Monel in food plants, in sea-going ships, from beginning to end of salt refineries . . . *and every place else where corrosion by salt is severe.* • Because Monel is also wear resistant and long-lived . . . and is resistant to corrosion by dyehouse liquors . . . it assures years of trouble-free dyeing at minimum cost. Write for further information on Monel for dyehouse equipment. Address:

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York, N. Y.

MONEL

Upper photo shows partial view of eight Monel-lined dye tanks in use in an eastern plant. Rolls, reels, baffle plates, heating units and tie rods are also made of Monel. Lower photo shows close-up of Monel lining after more than ten years' use.

"Monel" is a registered trade-mark of The International Nickel Company, Inc., which is applied to a nickel alloy containing approximately two-thirds nickel and one-third copper.

INCO MONEL

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Entered as second-class matter at the Post Office, Dalton, Ga., under the Act of March 3, 1879.

Modernize with X Family Looms

Here's Why

They Run Faster
More Than 20% Faster

They Allow More Yarn on Bobbins
They Take Larger Yarn Beams

The Output is Greater
The Cost per Yard is Less

They Are Accurately Machined
The Upkeep is Less

They Weave Better Fabrics
The Trade Demands Better Fabrics

You Are Looking for Profits
Which Are
Hard to Get with Obsolete Looms

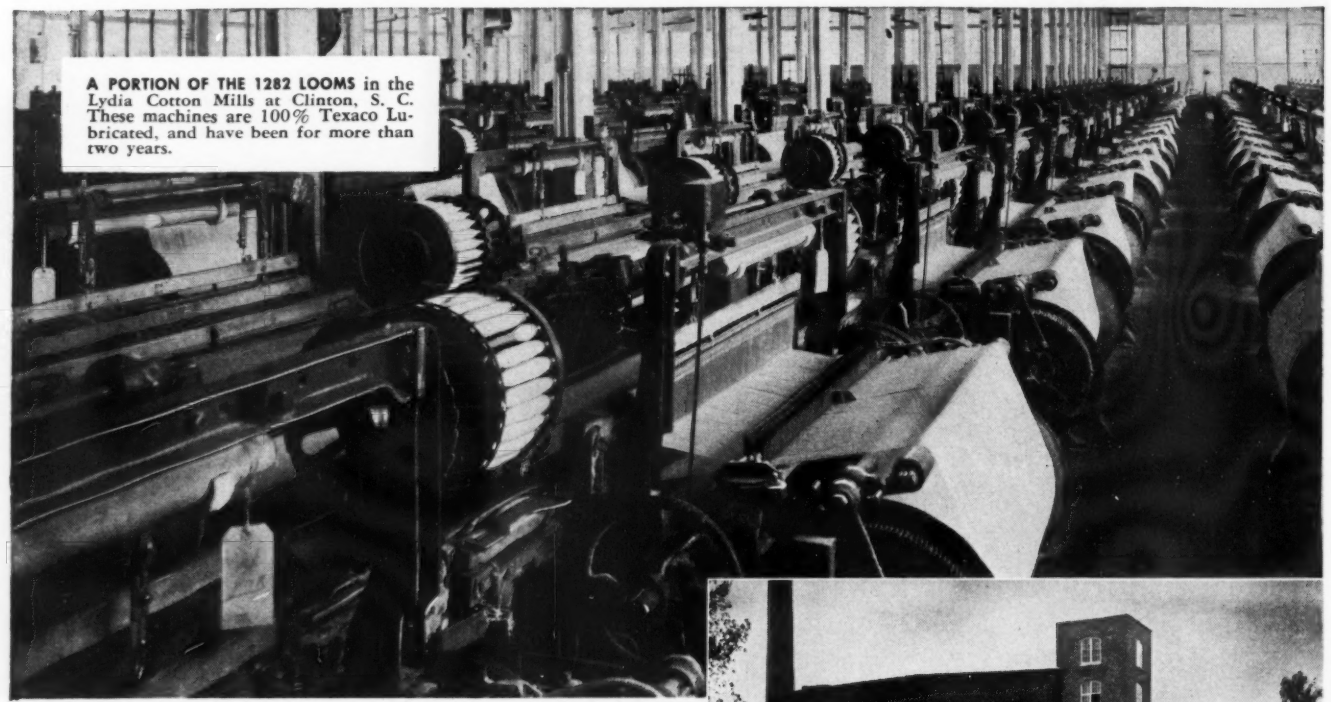
X XK and XL for Cottons
XK and XD for Rayons

DRAPER CORPORATION

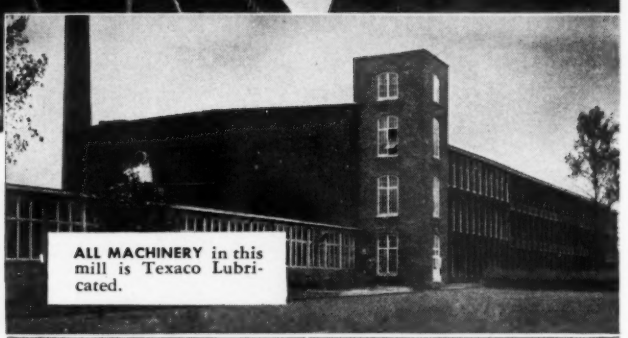
Atlanta Georgia Hopedale Massachusetts Spartanburg S C

Lydia Cotton Mills!

AN OUTSTANDING LUBRICATION SUCCESS



A PORTION OF THE 1282 LOOMS in the Lydia Cotton Mills at Clinton, S. C. These machines are 100% Texaco Lubricated, and have been for more than two years.



ALL MACHINERY in this mill is Texaco Lubricated.

FOR SEVERAL YEARS now, the Lydia Cotton Mills have been a shining example of the savings made possible through the use of one brand of lubricants. Throughout the property, all lubricants are Texaco.

Through the co-operative help of Texaco engineers, results are most gratifying in economy, better performance, and low maintenance.

Experienced lubrication engineers, trained in the selection and application of Texaco Textile Lubricants, will be glad to demonstrate to you that savings can be made with Texaco Perfected Lubrication.

For prompt engineering service and deliveries, phone the nearest of our 2279 warehouses in the U. S., or write:

The Texas Company, 135 East 42nd Street, New York, N. Y.

•

Texaco Dealers invite you to tune in The Texaco Star Theatre—a full hour of all-star entertainment—Every Wednesday Night—Columbia Network—9:00 E.S.T., 8:00 C.S.T., 7:00 M.S.T., 6:00 P.S.T.

All small high-speed ball and roller bearings get Texaco Starfak Grease No. 2. Result—power consumption reduced.

All stock is treated by the Texaco Texspray System of cotton conditioning.

All spindles are lubricated with Texaco Spindura Oil AA.

All looms are lubricated with Texaco Stazon B, reducing lubrication costs 10% and maintenance costs 15%.

Texaco general machine oils and greases are used throughout the mill.

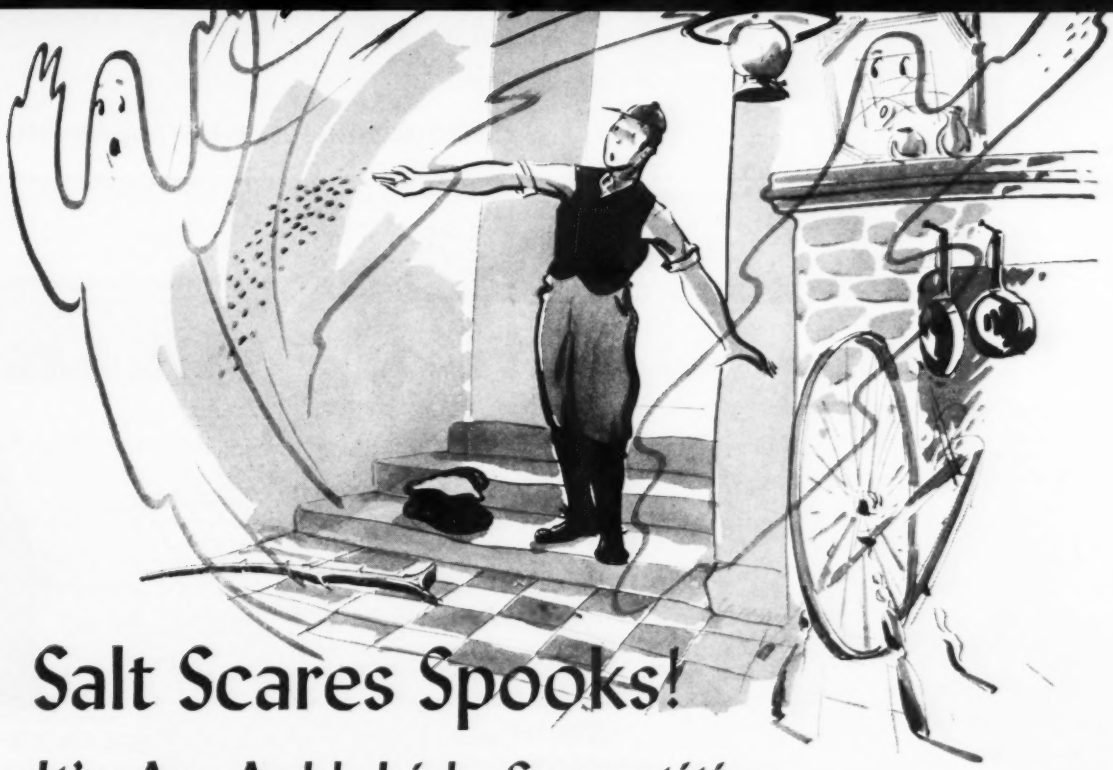
All those interested in anti-friction bearings should ask for a copy of this booklet. A real treatise on the perfected lubrication of these bearings.

TEXACO

REG. T.M.

TEXACO

TEXTILE LUBRICANTS



Salt Scares Spooks!

It's An Auld Irish Superstition

"Let them as cannot afford the ritual of exorcism for haunted premises, scatter about in likely places great handfuls of salt. Poltergeists, demons and other unkindly spirits swoosh off at once, making loud whimpering noises."

—From unpublished Folklore.

If this recipe failed to work, the only cost was the loss of the salt. Superstitions about the salt content of electrolytic caustic soda today, may be costing you production economies that can be obtained without fear of upsetting present processes.

To their complete satisfaction in every respect a number of large mills are using Warner Caustic Soda . . . a regular production grade of electrolytic caustic soda that has its salt content reduced to a percentage that has no discernible deleterious effect.

A frank discussion in your mill may clear up any misgivings you have about electrolytic caustic soda. If definite savings—made without fear of upsetting your present processes—is interesting to you, set the date and a Warner technical expert will call. Your inquiry will receive immediate attention.

OTHER WARNER CHEMICALS

Tetra Sodium Pyrophosphate
Phosphoric Acid
Sodium Phosphates
(mono, di-and tri basic)

Liquid Caustic Potash
Chlorine, Liquid
Carbon Tetrachloride
Trichlorethylene

Carbon Bisulfide
Sodium Sulfide
Epsom Salt
Hydrogen Peroxide

WARNER

CHEMICAL COMPANY ☆ DIVISION OF

WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.

HERE'S THE
INSIDE STORY
why GOODYEAR COMPASS CORD BELTS last far longer, run truer on textile drives
BALANCED BODY made of heavy rope-cord spiralled continuously without a splice. Cord on opposing sides of belt axis is twisted in opposite directions to neutralize torque of cord.
BALANCED COVER laid parallel to axis of belt — made of fabric in which alternate warp threads are twisted in opposite directions to prevent side-creep.
RIGHT-HAND TWIST
LEFT-HAND TWIST
GOODYEAR COMPASS CORD BELT balanced construction fully covered by U. S. and foreign patents

"WHY is it," textile men regularly ask us, "that the COMPASS Cord belt lasts so much longer, runs so much truer than other so-called cord belts?"

The answer lies in Goodyear's *patented* method of cord construction that no other manufacturer can employ. To explain:

The problem in building cord belts is the torque developed in the cords which tends to run the belt off the pulleys. Other belts attempt to overcome this by wrapping the cords in several plies of fabric, necessitating the use of small string-like cords to hold down belt thickness.

Balanced — and true!

In the COMPASS Cord belt torque is equalized by twisting the cords on opposite sides of the belt axis in reverse direction. Likewise alternate warp-threads in the fabric envelope are twisted in opposing directions. This *balanced* construction in both cords and cover neutralizes any tendency of the belt to travel toward either side and insures a perfectly true-running belt.

What's more—it eliminates the necessity for wrapping the cords in extra heavy plies of fabric, permitting the use of larger, stronger rope-sized cords that give us a practically stretchless belt with far higher flex and service life—*as countless performance records prove!*

That's why it is important to specify "Goodyear COMPASS Cord" when ordering belting for your tough drives. The G.T.M.—Goodyear Technical Man—will be glad to give you a demonstration of COMPASS' superior performance. To bring him to your mill, write Goodyear, Akron, Ohio, or Los Angeles, California—or phone the nearest Goodyear Mechanical Rubber Goods Distributor.

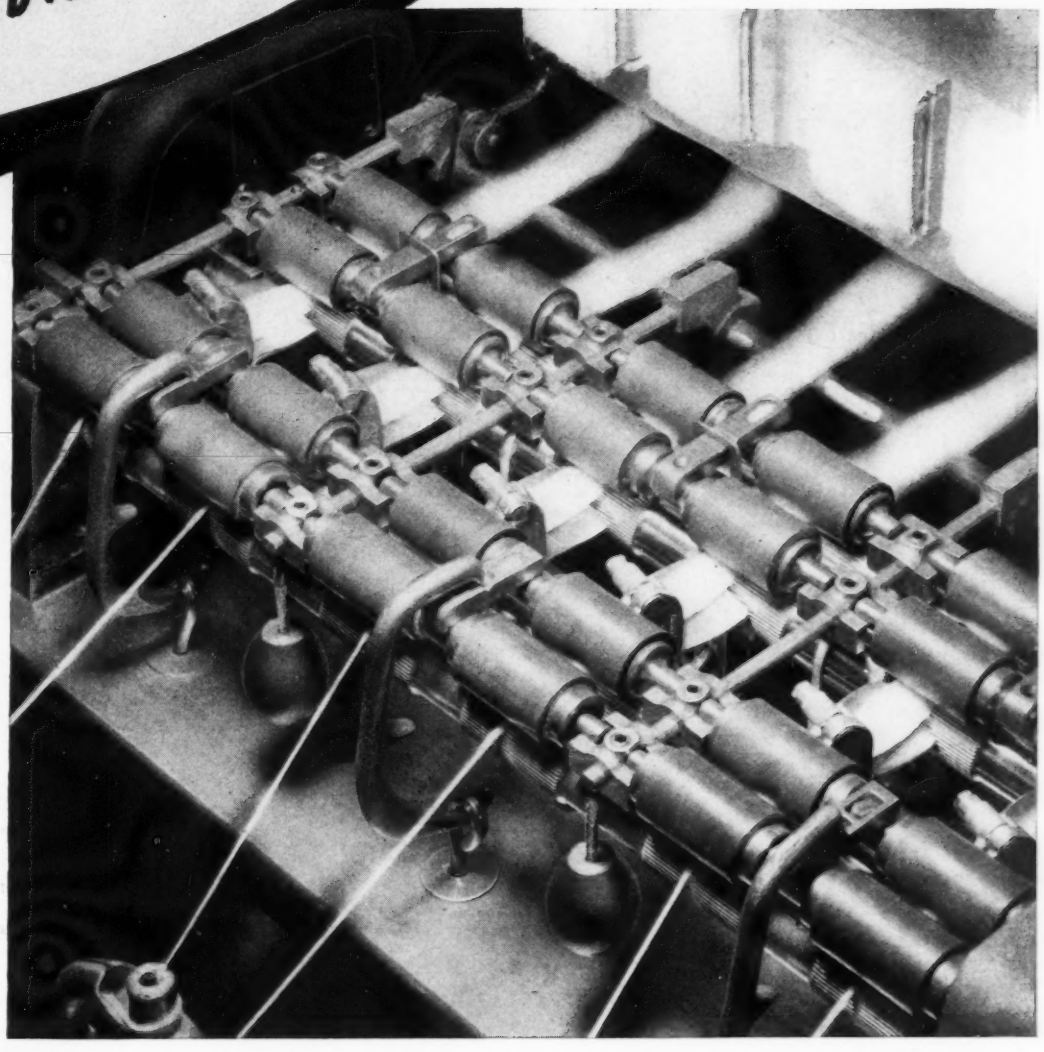
Centennial of Charles Goodyear's discovery of vulcanization

THE GREATEST NAME IN RUBBER

GOODYEAR

Compass — T. M. The Goodyear Tire & Rubber Company

THE MOST WIDELY COPIED OF THE WHITIN ROVING DRAFTING SYSTEMS



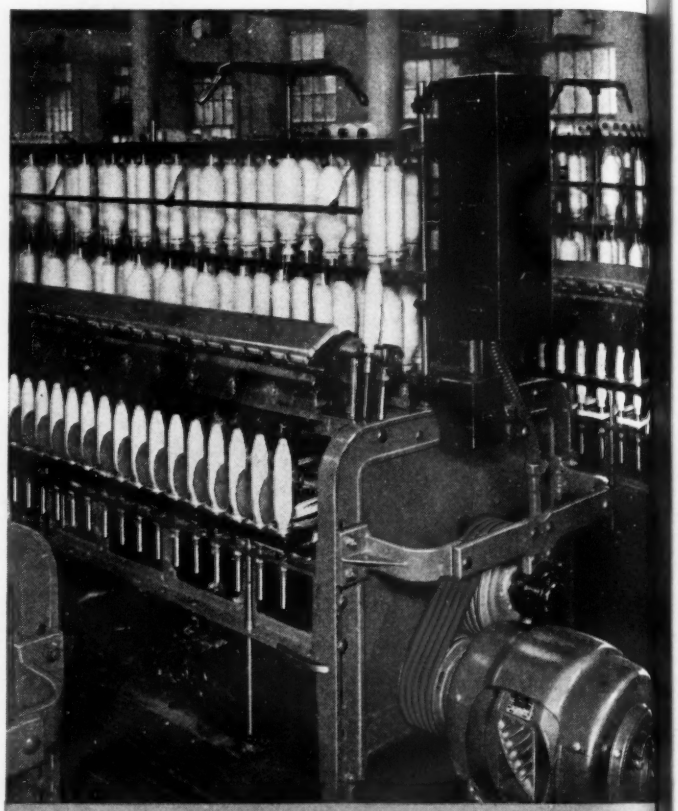
SIMPLE
CLEAN
EFFECTIVE

WHITIN INTER-DRAFT ROVING FOR DRAFTS BETWEEN 10 AND 18

Do you make 1.20 to 2.50 hank roving? Let us tell you about some of our large installations on work similar to yours.

WHITIN MACHINE WORKS
WHITINSVILLE, MASS., U. S. A.
CHARLOTTE, N. C. ATLANTA, GA.

GET THE UNDIVIDED RESPONSIBILITY THAT MEANS LOWER OPERATING COSTS!



ALLIS-CHALMERS QUICK-CLEAN MOTORS . . . Allis-Chalmers Control Equipment . . . Vari-Pitch Texrope Drives give undivided responsibility for power application that brings increased profits in this southern textile mill.

It's Worth Dollars to You to Have One Manufacturer Responsible for Your Motors, Controls, and Drives! Learn the Allis-Chalmers Story of Big Savings and Better Performance!

Mill owners who are now using Allis-Chalmers Motors, Allis-Chalmers Controls, and Allis-Chalmers Texrope Drives will tell you why it pays to get this Undivided Responsibility!

The motors are the famous Quick-Clean Motors — designed to beat lint-laden air conditions in the textile plants . . . tailor-made for the industry!

The drives are the original Texrope V-belt drives originated and developed for dependable, money-saving power transmission in textile mills!

Also available is the well-known line of Allis-Chalmers cost-cutting Control Equipment, especially equipped and constructed for Textile mill use.

Add them together and you get an unbeatable combination . . . with a single, undivided responsibility for giving you continuous operation . . . lower service costs . . . greater profits! There is no passing the buck when you specify the Allis-Chalmers complete service!

It Pays to Depend on Allis-Chalmers!

Allis-Chalmers responsibility is *your insurance* against power failure . . . plant shutdowns . . . loss of production! Make use of Allis-Chalmers pioneering leadership and experience in the textile field. Follow the lead of prominent mill owners who have learned it pays to depend on Allis-Chalmers!

For full details on Quick-Clean Motors, Allis-Chalmers Control Equipment, and Texrope Drives and Sheaves . . . call the nearest district office, or write to Allis-Chalmers direct. An engineer, trained in textile problems, will be glad to show you how you can keep your production steady . . . reduce your operating and maintenance costs . . . increase your profits — with Allis-Chalmers service and undivided responsibility!

1950

PRODUCTS ENGINEERED TO PAY FOR THEMSELVES

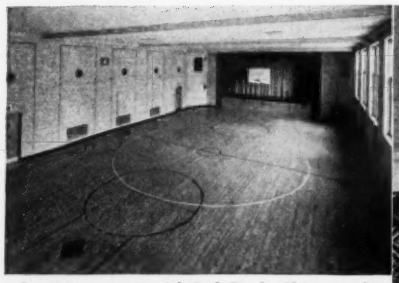
Electrical Equipment • Power Transmission Equipment • Steam and Hydraulic Turbines • Blowers and Compressors • Engines and Condensers • Centrifugal Pumps • Flour and Cereal Mill Equipment • Boiler Feedwater Treatment • Saw Mill and Timber Preserving Machinery • Crushing, Cement, and Mining Machinery • Power Farming Machinery • Industrial Tractors and Road Machinery

ALLIS-CHALMERS

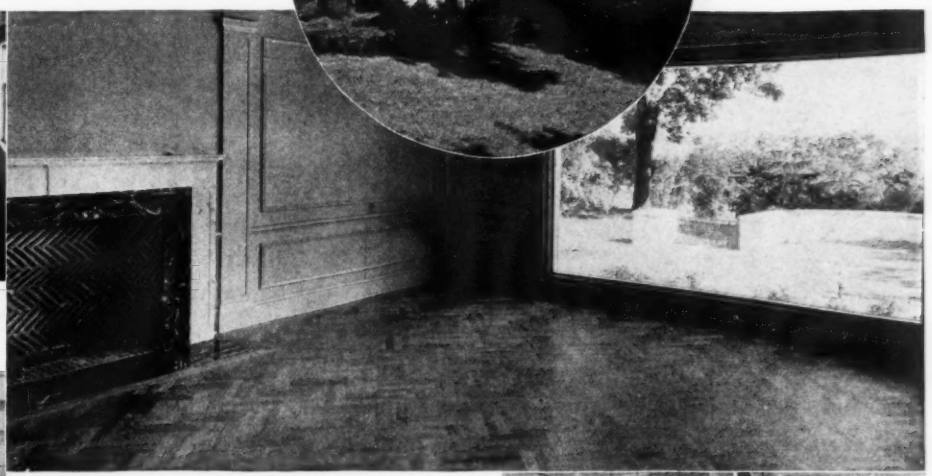
MILWAUKEE · WISCONSIN

Floors that pay Dividends

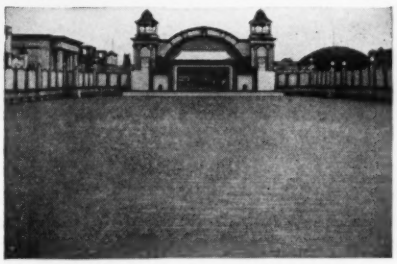
Floors of beauty *create proud home-owners, assets for builders. Like Birch, Hard Maple offers many patterns and color effects.*



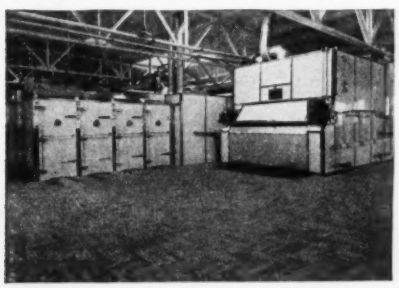
Service counted *with Oak Park, Chicago suburb. The new "gym" added to its Emerson school, was floored with Hard Maple, which "had served so well in the original building."*



School's a happier place *for children confined, when floors are warm and dry and cheerfully clean, as in this Indianapolis classroom, one of thousands floored with Hard Maple.*



5 years outdoors *in rain, sun and snow, yet this dance floor at Chicago's White City remains in good condition. Perfect for dancing, smooth Hard Maple lowers operators' costs as well.*



Visitors *to Brown's Bakery, Defiance, Ohio, find sanitation from the ground up, starting with clean Hard Maple floors, as used in hundreds of bakeries.*

● Many are Hard Maple's uses, and wherever it's used in floors, one thing's sure . . . you can *forget* that floor once it's carefully laid. No "make this good and that," with Hard Maple.

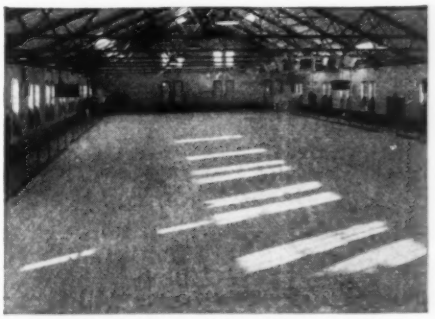
Of all floorings, this pays dividends, every year of its life . . . dividends not only in comfort, in pride of ownership and satisfaction in use, but in *"low cost of using."* For its smoothness is lasting, its beauty practically permanent, its cost of maintenance and cleaning remarkably low. And, usually, its extra years of service make it the most economical flooring that money can buy.

This is important to any builder—for a satisfied customer is still the best advertisement. Far-seeing builders consider Hard Maple carefully—on *any* job—and make sure always it's trademarked **MFMA** Maple, the trademark that guarantees it to be all *Northern* Hard Maple, milled and graded to exacting Association standards.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1794 McCormick Building, Chicago, Ill.

See our catalog data in Sweet's, Sec. 11/77.
Write for photographic folder on **MFMA** *Maple flooring*

Scores of textile plants, *like the Grabur Silk Mill at Graham, N. C., are floored with Hard Maple, most economical flooring for most industries.*



Hundreds of skaters *nightly rolling on eight wheels each—that's punishment. But "Skateland" with its log cabin style* **MFMA** *Maple floor (Trenton N. J.) makes sure of satisfied skaters, as rinks everywhere.*

Floor *with* MFMA Maple

REG. U. S. PAT. OFF.

(NORTHERN HARD)

We'll pay you a bonus in **FIRST QUALITY** *cloth!*

(A small section of the nine-acre weave shed at Naumkeag Steam Cotton Co., Salem, Mass. In this room, four thousand looms operate in a correctly humidified atmosphere provided and maintained by Amco equipment and Amco Humidity Controls.)

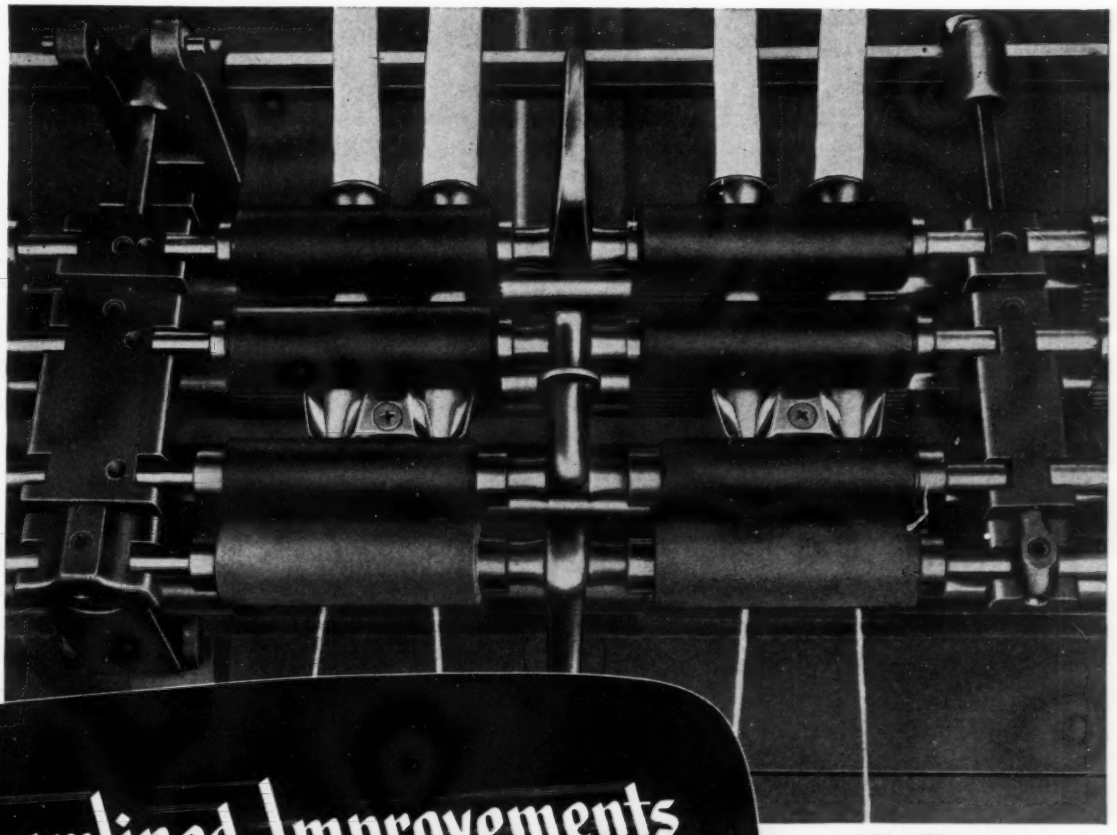
IF you operate a cloth mill, the weave room is the point where your earnings are determined. No matter how efficiently the yarn production is conducted, profit or loss is arrived at in the weave room. And every increase in percentage of first quality cloth produced by better weaving reduces overhead, boosts profits.

Amco Humidification in your weave room will actually pay you a bonus in first quality cloth – by production at desired weight and width, by increased loom efficiency, and by reduction of seconds, which are costly to manufacture and costly to sell.

Carding, roving, spinning, weaving . . . proper humidification is as much a part of each as the machinery itself. Let the Amco Engineer help you surround each process with "money-making air." American Moistening Co., Providence, Rhode Island. Boston, Mass. . . . . Atlanta, Ga. . . . . Charlotte, N. C.

AMCO HUMIDIFICATION

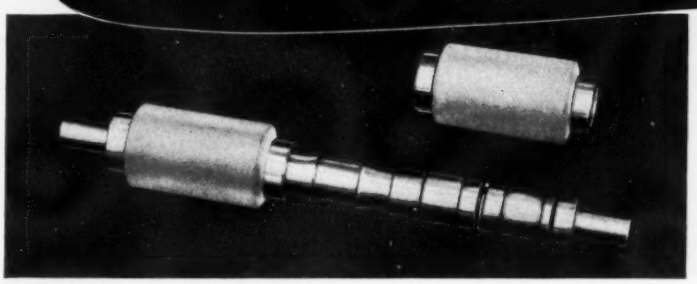
TAKE YOUR TEXTILE HUMIDIFICATION JOB TO THE TEXTILE HUMIDIFICATION SPECIALIST



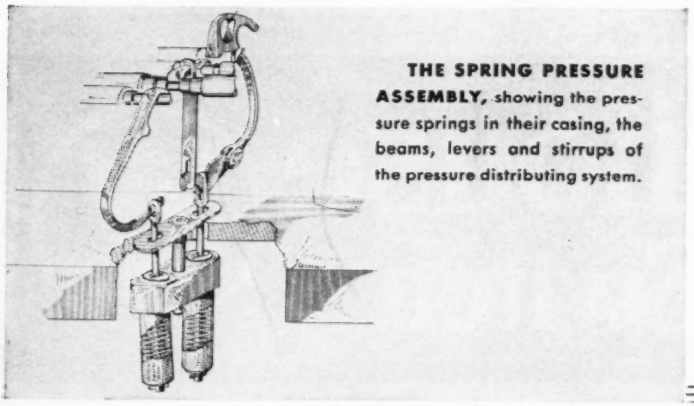
TOP VIEW of the Model J-3 Controlled Draft Roving Assembly. Note how the Forming Trumpet gathers the wide ribbon of fibres, and transforms it into a uniform compact tubular shape just before it reaches the final drafting zone.

Streamlined Improvements the new Model J-3

CONTROLLED DRAFT ROVING ASSEMBLY



THE NEEDLE BEARING TOP ROLL is a distinctive feature of the Model J-3. The bearings are enclosed in dust and lint proof casings, and are lubricated at long intervals with a rust-inhibiting grease. With this top roll, there is a smooth, uniform motion and effective fibre control even with heavy grists of cotton.



THE SPRING PRESSURE ASSEMBLY, showing the pressure springs in their casing, the beams, levers and stirrups of the pressure distributing system.

THIS NEW SACO-LOWELL Controlled Draft Roving Assembly was designed to accomplish three important objectives:

1 **IMPROVING** the fibre control function of the Forming Trumpet.

2 **DEVISING** a source of roll pressure which would be efficiently uniform in action, entirely trouble-proof in maintenance, and quickly adaptable to changes in operating conditions.

3 **ARRANGING** the entire drafting assembly in order to reduce the necessity of frequent cleaning and to facilitate this work when it becomes necessary.

THE RESULT:—Even-Roving, economically produced through efficient fibre control—spic-an'-span cleanliness and thorough lubrication.

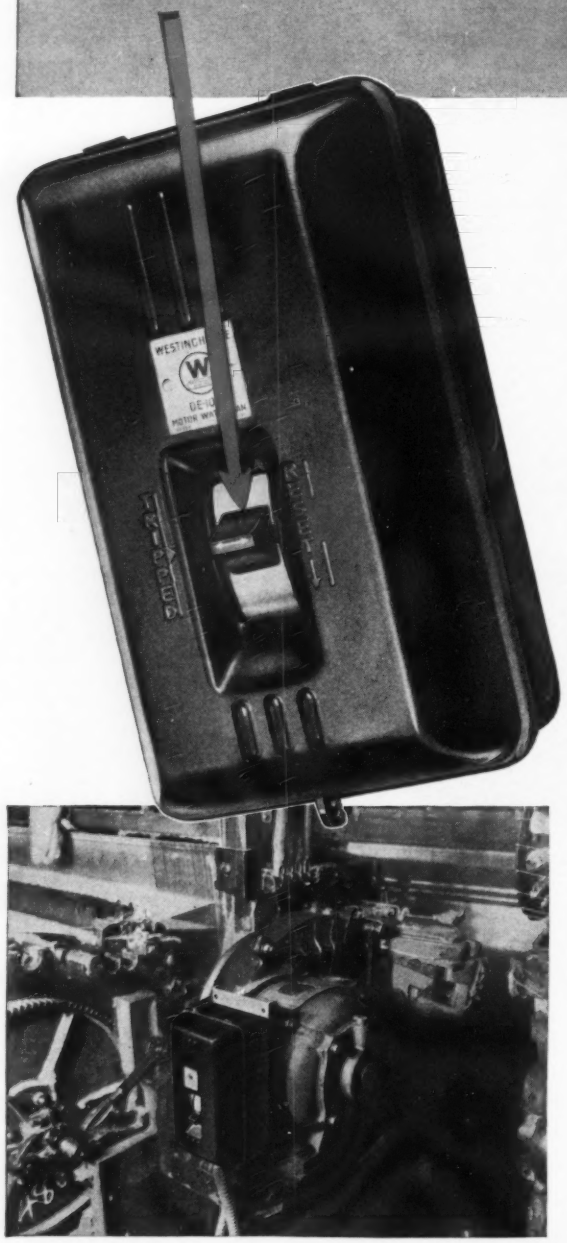
BETTER ROVING AT A SAVING should interest every mill. Our engineers will show you how easily this can be accomplished with the Model J-3 frame.

SACO-LOWELL SHOPS

60 Batterymarch Street, Boston, Mass.

Charlotte, N. C. Atlanta, Ga. Greenville, S. C.

IT'S EASY TO SEE WHETHER THIS STARTER IS on-off OR tripped



New "De-ion" Switch for Motors up to 7½ hp

This new loom switch, the Westinghouse Motor Watchman, has an indicating handle on the front of the starter. It shows the operator or inspector at a glance whether the starter is tripped, on, or off. Smaller, more compact, it is easily mounted on or near the machine. Saves time . . . saves guessing . . . saves space.

You get all these advantages only in the new Motor Watchman

- Westinghouse "De-ion" Arc Quenchers protect contacts from flashovers . . . prolong contact life.
- Snap action bi-metal disc relay protects motor from overload. Resets to correct calibration — nothing to replace.
- Safety interlock prevents accidental contact with live parts.

For complete data, ask your nearest Westinghouse office, electrical wholesaler or industrial agent.

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.
East Pittsburgh, Pa.

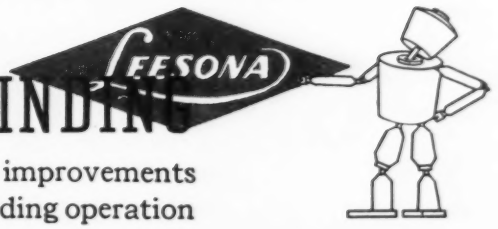
J-20847-A

Westinghouse Loom Switch

W WESTINGHOUSE ELECTRIC

THIS IS NO. 18 OF A SERIES ON

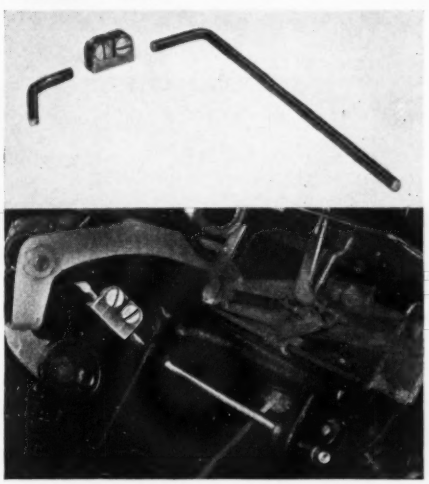
GETTING THE MOST FROM WINDING



Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

QUICK REPLACEMENT OF WORN DOGS (No. 50 Winder)

Because of a new design of Traverse Frame Dog, it is possible to replace worn Dogs without loss of time removing the Traverse Frame from the machine.



Coupling for New Two-Piece Dog

The end that contacts the Segment can be sawed off, and the rod that remains in the Traverse Frame can be coupled to a new end piece as shown in the illustration. At any future time, it will only be necessary to replace the small end piece by disconnecting it from the coupling.

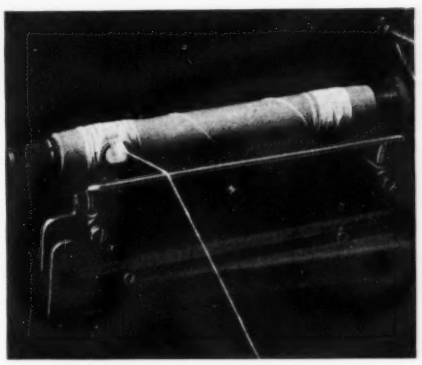
In addition to the convenience in replacing worn Dogs, this new two-piece design has the following advantages:

1. The end piece can be turned in the coupling so that it will be parallel with the Segment; this makes a more perfect contact with both walls of the groove in the Segment.
2. The end piece can also be tilted in the coupling so that the entire length of the dogging surface will contact the Segment. Some mills prefer a "toe or heel" contact, but we recommend that the full length of the dogging surface be used for best winding results.
3. With the proper setting, wear is distributed over the entire dogging surface, which increases the life of the Dog.

One-piece Dogs that were purchased recently and are still in good condition can be cut apart, and with the new coupling, will provide the increased life and other advantages of the Two-Piece Dog.

STARTING YARN ON SMALL-DIAMETER TUBES (No. 50 Winder)

When winding coarse yarns or high-twist yarns on small-diameter tubes, the yarn has a tendency to slip or pull in at the ends of the traverse, producing packages with poor centers.



Starting a 5/8" diameter Paper Tube

To provide a better gripping surface, the operator can wind a few coils of yarn on each end of the bare tube as illustrated. A hook is used when the yarn is under tension so that the operators' fingers will not be cut or burned.

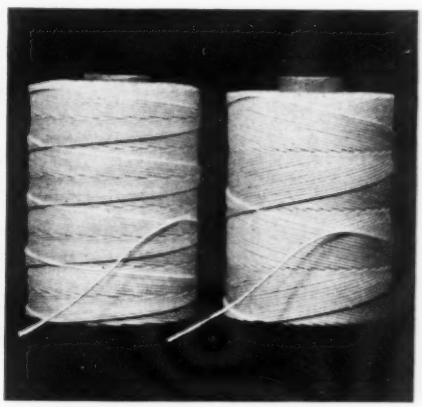
In some mills the operator is provided with a wet sponge, kept in a little container of water placed on the winder. Before starting up an empty tube, the operator wets the paper near the ends of the traverse; this also makes a better gripping surface for the yarn.

CHANGING WINDS WHEN CHANGING COUNTS OF YARN (No. 50 Winder)

With some types of material, a mill changing from fine to coarse counts of yarn will find it difficult to wind packages without bulging.

In some cases it will be possible to overcome the tendency to bulge by adjusting the tension or pressure. If not, it will be necessary to reduce the number of winds to obtain good self-supporting packages.

When *reducing* the number of winds on the No. 50 Winder, the cam speed is automatically increased. If the cam speed exceeds 250 R.P.M., it will be necessary to change the driving pulley to reduce the speed of the winding spindles.



Package at left was wound with 4 winds and shows a tendency to bulge on the end. Package at right was wound with 2 winds which increased the angle of yarn across the package. Note the good square end. Changing from 4 winds to 2 winds, reduced the spindle speed from 2000 R.P.M. to 1000 R.P.M.

When changing back from coarse to fine counts of yarn, it is advantageous to increase the winds to get the benefit of higher spindle speed. To determine the proper spindle speed, multiply 250 R.P.M. (the safe maximum cam speed) by twice the number of winds.

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

GARGOYLE VACTRA OILS

Comb-Boxes

Textile mills everywhere find this 3-step check-up an important aid in preventing comb-box overheating...

❶ Inspect the comb-box on every card for wear and improper setting.

❷ Always be sure you are maintaining correct oil level.

❸ Insist on Gargoyle Vactra Oils to maintain even temperature and avoid oil throw.

Result: Less churning and overheating —less wear—low oil costs.

THE SOCONY-VACUUM man offers you a complete line of lubricants, plus these *exclusives:*

The right lubricant for every machine . . . and new lubricants ahead of new needs . . . developed by world-famous research laboratories through close cooperation with machine builders.

73 years' experience—thousands of case histories—to guide in prescribing the right use of these lubricants to gain Lubrication Profits for you.

World-wide distribution and guaranteed uniformity—the same quality available everywhere.

STAY PUT—HELP YOUR

s Keep Cool

Another Tough Job for
OIL FILM

Successful operation of every machine depends on the quality of the oil that forms the *microscopic coating* which helps prevent metal-to-metal contact.

SOCONY-VACUUM

Industrial Service and Lubricants Help to Lower Costs by

Correct Lubrication

GARGOYLE Lubricants

SOCONY-VACUUM OIL CO., INC.

Standard Oil of New York Division · White Star Division
Lubrite Division · Chicago Division · White Eagle Division
Wadhams Division · Magnolia Petroleum Company
General Petroleum Corporation of California

Snug-Fitting
MARQUETTE NOVIBRA

Blade spring assures snug fit of bobbin at top of spindle.

Three spring buttons hold bobbin exactly in place, assuring true seat location and easy doffing.

These are only two of the many exclusive NOVIBRA features that assure you . . .

BETTER YARN . . . FASTER PRODUCTION

LESS VIBRATION . . . LOWER COSTS

The MARQUETTE METAL

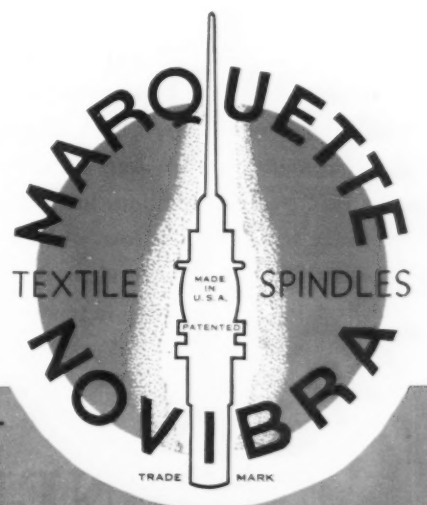
1170 GALEWOOD DRIVE, CLEVELAND, OHIO . . . BYRD MILLER, 908 WOODSIDE BLDG.

Bobbins *Always*..with
ROLLER BEARING SPINDLES

MARQUETTE NOVIBRA is a high-speed roller-bearing spindle—precision made and perfectly balanced. It reduces vibration to a minimum, and is capable of meeting any demands in twisting and spinning. Every feature is checked and tested to assure complete satisfaction.

MARQUETTE NOVIBRA is American-made by The Marquette Metal Products Co., specialists in precision parts and assemblies for the textile industry.

Illustrated circular will be mailed on request.



PRODUCTS COMPANY

GREENVILLE, S. C. . . . STANLEY MORTON, 25 WEST DORRANCE ST., KINGSTON, PA.

IT'S EASY TO

"tend to your knitting"

WITH COOPER HEWITT FLUORESCENT LAMPS

Every thread is clearly defined—so distinct as to appear magnified—when the detail-revealing light of Cooper Hewitt Fluorescent lamps is used. Detecting breaks and tieing broken ends becomes an almost effortless operation. In fact every operation, including inspection, is easier, more accurate, and faster when Cooper Hewitt Fluorescent lamps are in service. » Giving the workers the best light obtainable is true economy. That is why so many mill owners and operators prefer Cooper Hewitt Fluorescent lamps. They make night work as pleasant as day work by giving "better than daylight" illumination throughout every twenty-four hours if needed. The light blends well with daylight; it banishes profit-consuming eye fatigue. » More than 30 years of experience in the application of mercury vapor light to practically every textile operation is at your service. Give us your toughest job—then you be the judge! General Electric Company, Dept. 166-C-K, Nela Park, Cleveland, Ohio.

GENERAL ELECTRIC

980F

. . . "and on the strength of various qualities and advantages" . . .

MARCEL PROUST

OF COURSE, Marcel Proust wasn't referring to Crown Tested rayon merchandise, when he made the statement above—but he might very well have been, for it fits so aptly!

For the symbol of the Crown stands for Crown Tested Quality . . . and its advantage is that it appears only on rayon fabrics or merchandise which has been check-tested and *approved* for various points of consumer satisfaction by the Better Fabrics Testing Bureau, official analytical laboratory of the National Retail Dry Goods Association.

Give YOUR product the *advantage* of Crown Tested Quality . . . by identifying YOUR merchandise with Crown Tested tags or labels!*

CROWN TESTED RAYON FABRICS

**For further information get in touch with*

AMERICAN VISCOSE CORPORATION
200 Madison Avenue, New York City
The World's LARGEST Producer of Rayon Yarn

CROWN TESTED AND APPROVED CROWN RAYON

Copr. — American Viscose Corporation

THE FIRST NAME IN RAYON . . . . . THE FIRST IN TESTED QUALITY

"WE GOT A 70% RETURN THE FIRST YEAR!"

Besides getting a more uniform warp, this mill saves $2250 on steam and size alone with a Taylor Engineered Slasher Control System!

A 70% RETURN? Yes, this mill got it by saving $1250 on size due to more efficient cooking, handling, and circulation . . . by saving $1000 on steam, due to the closer regulation on temperatures . . . by cutting loom stops 21-32% and thus increasing weave room production 1 to 2%! And remember: In addition to a 70% return, this mill got a more uniform warp—a more uniform, *salable* cloth!

That's what happened in a mill that slashes about 600,000 lbs. of warp yarn a year, and that has many active styles with many different constructions, sizing warp yarn numbers 10 to 19 on 11 slashers. It was the result of putting in Taylor engineered Temperature Control—on all 11 slashers and on all kettle equipment.

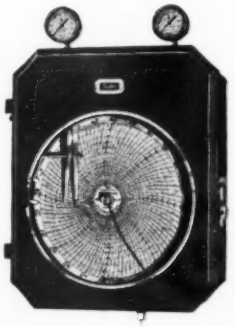
Make savings like these yourself

Your mill might be different from the above mill in many ways. But inexact temperature regulation can play the *same* profit-eating tricks on *you*. So cut *your* slasher costs and standardize *your* fabric quality—with a Taylor Slasher Control System.

Save on other processes, too

Follow the lead of the scores of other mills that have discovered they can save *even more* money by putting simple, efficient Taylor Control on size cookers, jigs, bleaching kiers, dryers, and on other processes where exact temperature control is vital. This Taylor Control is economical to buy. It's easily installed. And, as you can see from the case above, it soon pays for itself.

So let a Taylor representative give you the facts on Taylor Control for slashers and other processes. There's no obligation. Write Taylor Instrument Companies, Rochester, N. Y. Plant also in Toronto, Can. Manufacturers in Great Britain: Short & Mason, Ltd., London.

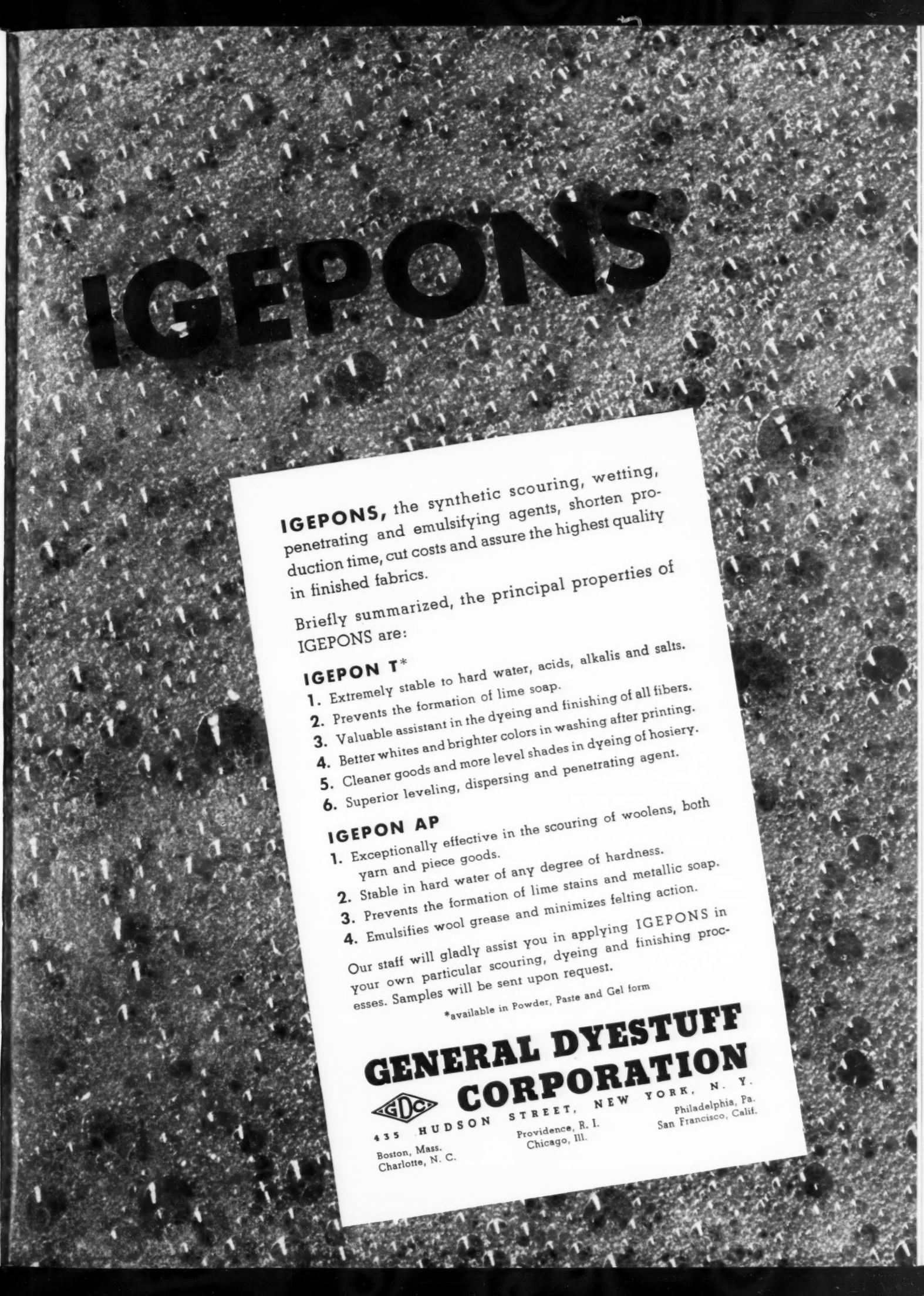


The Heart of Taylor Control! This precision instrument, a Taylor Fulscope Recording-Controller, is easily adjusted to maintain any slasher temperature you want. It writes a handy-to-file record of its accurate, minute-by-minute control.

Taylor

Indicating Recording Controlling

TEMPERATURE, PRESSURE, FLOW *and* **LEVEL INSTRUMENTS**



IGEPONS, the synthetic scouring, wetting, penetrating and emulsifying agents, shorten production time, cut costs and assure the highest quality in finished fabrics.

Briefly summarized, the principal properties of IGEPONS are:

IGEPON T*

1. Extremely stable to hard water, acids, alkalis and salts.
2. Prevents the formation of lime soap.
3. Valuable assistant in the dyeing and finishing of all fibers.
4. Better whites and brighter colors in washing after printing.
5. Cleaner goods and more level shades in dyeing of hosiery.
6. Superior leveling, dispersing and penetrating agent.

IGEPON AP

1. Exceptionally effective in the scouring of woolens, both yarn and piece goods.
2. Stable in hard water of any degree of hardness.
3. Prevents the formation of lime stains and metallic soap.
4. Emulsifies wool grease and minimizes felting action.

Our staff will gladly assist you in applying IGEPONS in your own particular scouring, dyeing and finishing processes. Samples will be sent upon request.

*available in Powder, Paste and Gel form

GENERAL DYESTUFF CORPORATION

GDC

435 HUDSON STREET, NEW YORK, N. Y.

Boston, Mass.
Charlotte, N. C.
Providence, R. I.
Chicago, Ill.
Philadelphia, Pa.
San Francisco, Calif.

What Product or

Spinning-frame motor with large, unobstructed openings, and aerodynamic fans to clear the motor of lint or dust. Tested by more than two years' experience

The G-E loom motor is easy to oil, has exceptionally large oil reservoirs, and the electrical and mechanical characteristics to assure sustained high speed throughout the load range

▶ In one enclosing case, the G-E combination switch includes starter, short-circuit protection, running-overload protection, and disconnecting switch

For direct low-speed drives, G-E gear-motors are designed for high efficiency, and they occupy little space. In a typical example, the entire motor unit, complete with gearing, is only 3 inches longer than a standard motor. Pictured: A napper driven by a G-E gear-motor ▼

"FOUR-IN-ONE" CONTROL

THERE is scarcely an important process that does not require electrical operation or is not improved by it. And whether it's a totally enclosed, fan-cooled motor in a dye house, or a double-end-shaft gear-motor for mounting on the ceiling, or a motor with any of numerous standard and special modifications, you can get practically any type of electric equipment from General Electric.

From General Electric, too, you can get service in the emergencies when production may be disrupted by a flood or other catastrophe. Also from General Electric you can get promptly any renewal parts necessary to restore the equipment to original factory-new performance.

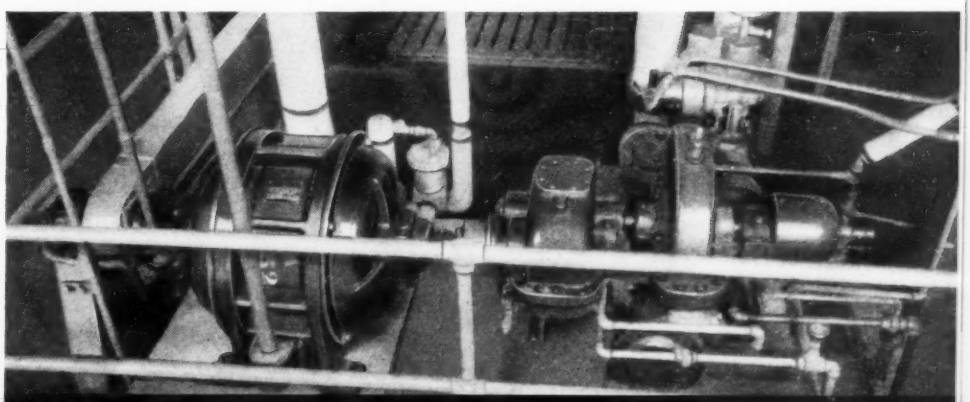
Pictured on these pages are a few of the representative equipments available from General Electric.

System Do You Need?

For many processes, there have heretofore been no satisfactory mechanical methods and no electrical system. A number of such processes have been improved by electrical operation.

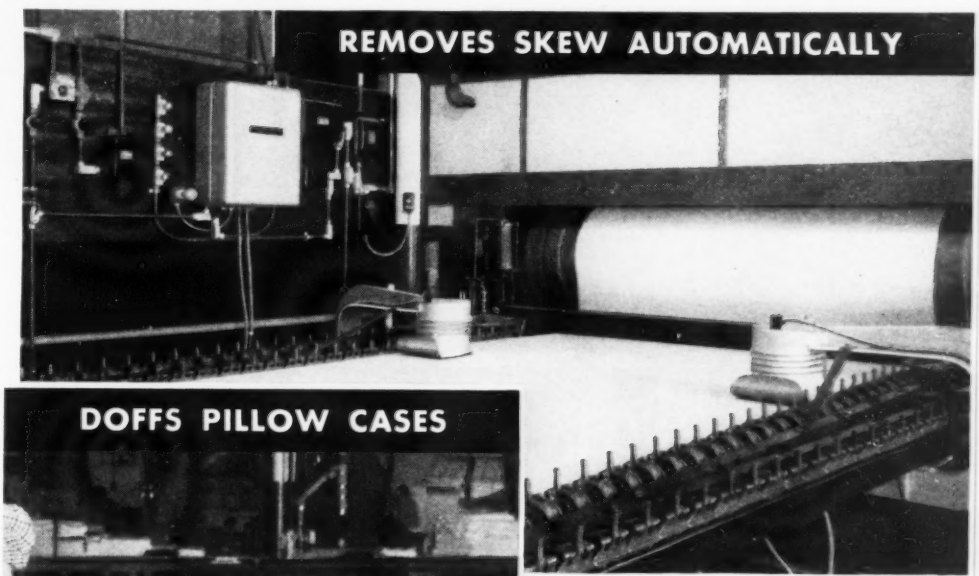
Work with mills and machinery manufacturers by General Electric engineers has brought successful attainment, for example, of weft-straightening, bow control, turbine-electric range drive, and specialized applications, such as an automatic air doffer to stack pillow cases.

Wherever you want electric drive, control, or auxiliary applications, ask for information from the nearest G-E sales-engineering office or write General Electric, Schenectady, N. Y.



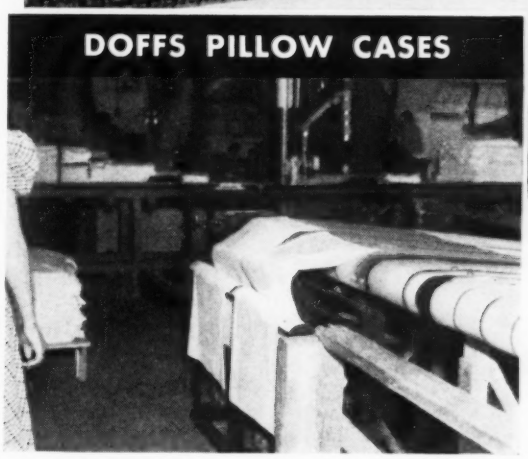
NEW TURBINE-ELECTRIC RANGE DRIVE

High-pressure process steam drives a turbine-generator for range-drive motor current—an advanced development for the textile industry. This is one of *four* kinds of range drive furnished by General Electric. The others are *d-c adjustable-voltage, d-c constant voltage,* and *adjustable speed a-c motor drive*



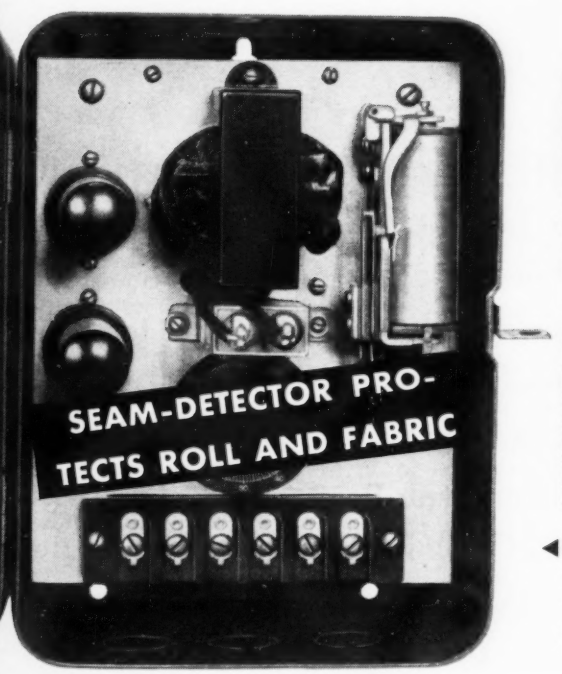
REMOVES SKEW AUTOMATICALLY

For automatic and continuous correction of skew, complete photoelectric weft-straightening control equipment—another development of General Electric for improved processing



DOFFS PILLOW CASES

◀ Stacked up by air with the greatest of ease. Electrically controlled puffs of compressed air, delivered at the right time and place, automatically flick pillow cases off this conveyor and stack them



SEAM-DETECTOR PROTECTS ROLL AND FABRIC

◀ Automatic letup. For fast, accurate easing up on the calender roll when the seam comes through, a G-E seam-detector equipment provides instant and automatic pressure release and pressure reset. This avoids denting the fiber roll and the consequent marring of cloth patterns

GENERAL ELECTRIC

011-543

Unmistakable Identification

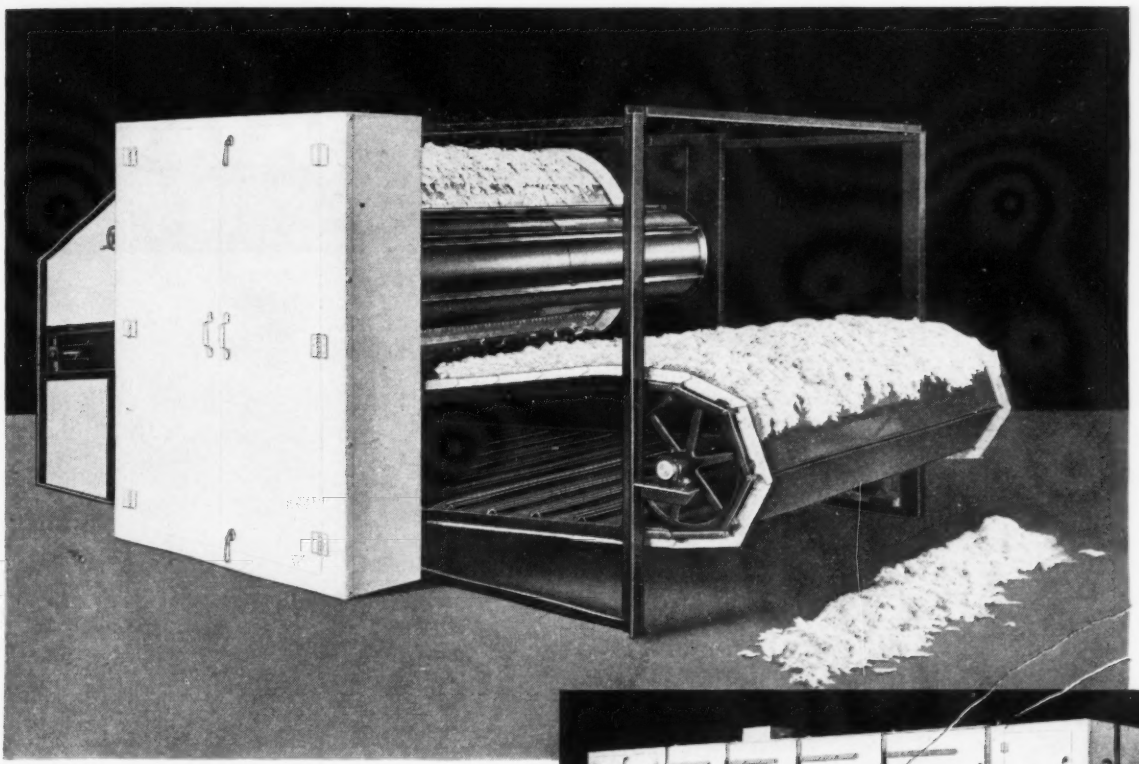
ROCKFISH or flounder? The housewife buys with confidence because she has learned nature's infallible marks. Your product, also, will be bought with greater assurance if you give it the guidance of unmistakable identification. Kaumagraph Dry Transfers provide attractive, economical, sure identification to any textile products. Kaumagraph Prestomarks, Embossed Seals and Lithographed Packing are other helps to better marketability. Upon request we will gladly study your needs and make constructive recommendations.

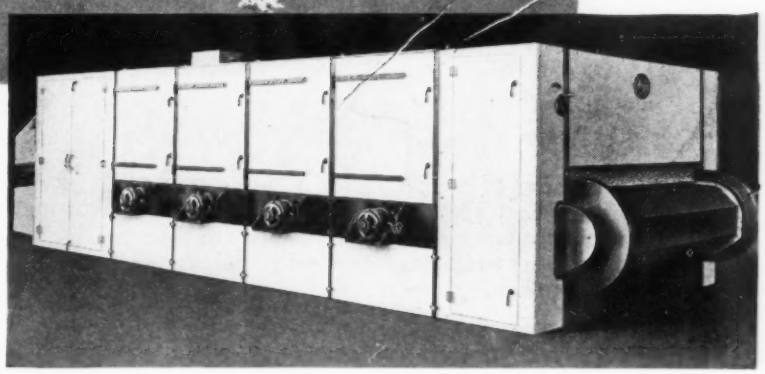
KAUMAGRAPH DRY TRANSFERS

Identification Headquarters **KAUMAGRAPH** *Company*

16-22 E. 34th St., New York

General Offices and Plant, Wilmington, Delaware . . . Representatives in Principal Textile Centers of the World





New PROFITS FROM THE RAW STOCK DYE HOUSE!

IF you are now operating centrifugal extractors in your stock dye house—or if you are operating stock dryers over five years old, Hunter engineers can show you how you can make genuine and worthwhile savings in time, money, labor and steam. For example:

In one recent survey made by Hunter Engineers, in a Southern cotton mill, they were able to demonstrate a direct savings of $5800 per year in labor and steam alone by new equipment installation. As well there was a decided savings in floor space.

In a recent installation Hunter Rotary Feeders, Squeeze Rolls, Blowers and Dryers eliminated 8 men in the dye house.

For full details of what new Hunter automatic equipment can do in your mill, and for full information on the new Hunter free engineering survey write

JAMES HUNTER MACHINE CO.

NORTH ADAMS, MASS.

•

Southern Agents:

CAROLINA SPECIALTY CO., Charlotte, N. C.

Western Representative:

E. G. PAULES, 343 Bendix Bldg., 1206 Maple St. Los Angeles, Cal.

JAMES HUNTER MACHINE CO., North Adams, Mass.

Please send me Bulletin RF which gives newest information on Automatic Feeding and Drying.

Name..... Title.....

Company .....

City..... State.....

GOOD BUSINESS NEWS

A succession of annual losses of $150,000 or more left the MAGNUS CORPORATION* with depleted working capital. Inability to take discounts on purchases impaired credit and increased operating costs.

As usual, under these conditions, current financing became a worrisome problem. Regardless of possibilities ahead, this company could not obtain from its regular sources sufficient funds to finance its potential sales. The experience demonstrated one of the glaring weaknesses of their financing set-up. A system which limited borrowing mainly on the evidence of a financial statement was a handicap rather than a help.

In direct contrast, our "NON-NOTIFICATION" Open Account Plan ignores such negative evidence, and provides funds on the positive evidence of a concern's ability to *sell*. Since this method obviously met their needs, the MAGNUS executives decided to try our service.

Our first advance on receivables was made on July 12th, 1937. The following excerpts from a letter we recently received prove the amazing results when they switched to *flexible* financing:

"As our balance sheet shows, we have accomplishea a fine net change in our operating and financing position. Losses have been transformed into 'net profit' during the current year . . . One of our largest suppliers advises that credit in excess of one half million dollars will be extended during 1939 if needed, due to our record, since July 1937, of making payments on or before due dates . . . The use of your service frees executives from the 'shackles' usually thrown around a business by financial institutions. I believe this freedom from the worry of meeting short time loans would alone be worth much more than the cost of your service."

* * *

"NON-NOTIFICATION" Open Account Financing probably costs no more, very likely less, than you pay for time loans. You pay no interest on unused or unusable funds. You get cash advances against shipments in whatever amount you require. You need not borrow in excess of actual requirements. Your deposits are credited immediately against advances. For detailed explanation, send for a copy of our free booklet "CAPITAL AT WORK" to Dept. TM.

**A fictitious name, but the facts and figures, taken from our records, can be certified.*

COMMERCIAL CREDIT COMPANY

"Non-Notification" Open Account Financing

BALTIMORE

BOSTON NEW YORK CHICAGO SAN FRANCISCO PORTLAND, ORE.

CAPITAL AND SURPLUS MORE THAN $65,000,000

ARE YOU AWAKE TO OUR WIDE VARIETY OF SULPHONATIONS?

FORTY YEARS of sulphonating experience enable us to supply not only all standard sulphonated oils and tallows, but also a variety of special products as well.

You may choose from our Sulphonated Olive Oils, which are *all* olive oil products, or from our Oratol series, having an olive oil base, combined with other vegetable oils of similar characteristics.

In our Sulphonated Castor Oil line, despite fashion changes in forty years, Monopole Oil is still considered the leader. It is double sulphonated, highly concentrated, and noted for its solubility in salt solutions, acid liquors, hot, cold or hard water. Among the single sulphonated oils we can supply any concentration adjusted to any pH.

For your Sulphonated Tallow requirements, use our Cream Softener J.B. or Conc. Our special method of sulphonating tallow protects the natural glycerine content in the tallow and thereby assures the maximum softening power. Samples of any product will be sent on request.

SULPHONATIONS MOST GENERALLY USED:

Monopole Oil
Monopole Oil M.D.D.
Monopole Brilliant Oil
Sulphonated Castor Oil
Sulphonated Olive Oil
Sulphonated Teaseed Oil
Sulphonated Red Oil
Sulphonated Oleic Acid
Sulphonated Pine Oil
Sulphonated Mineral Oil
Sulphonated Neatsfoot Oil
Sulphonated Cocoanut Oil
Sulphonated Corn Oil
Sulphonated Peanut Oil
Sulphonated Tallow

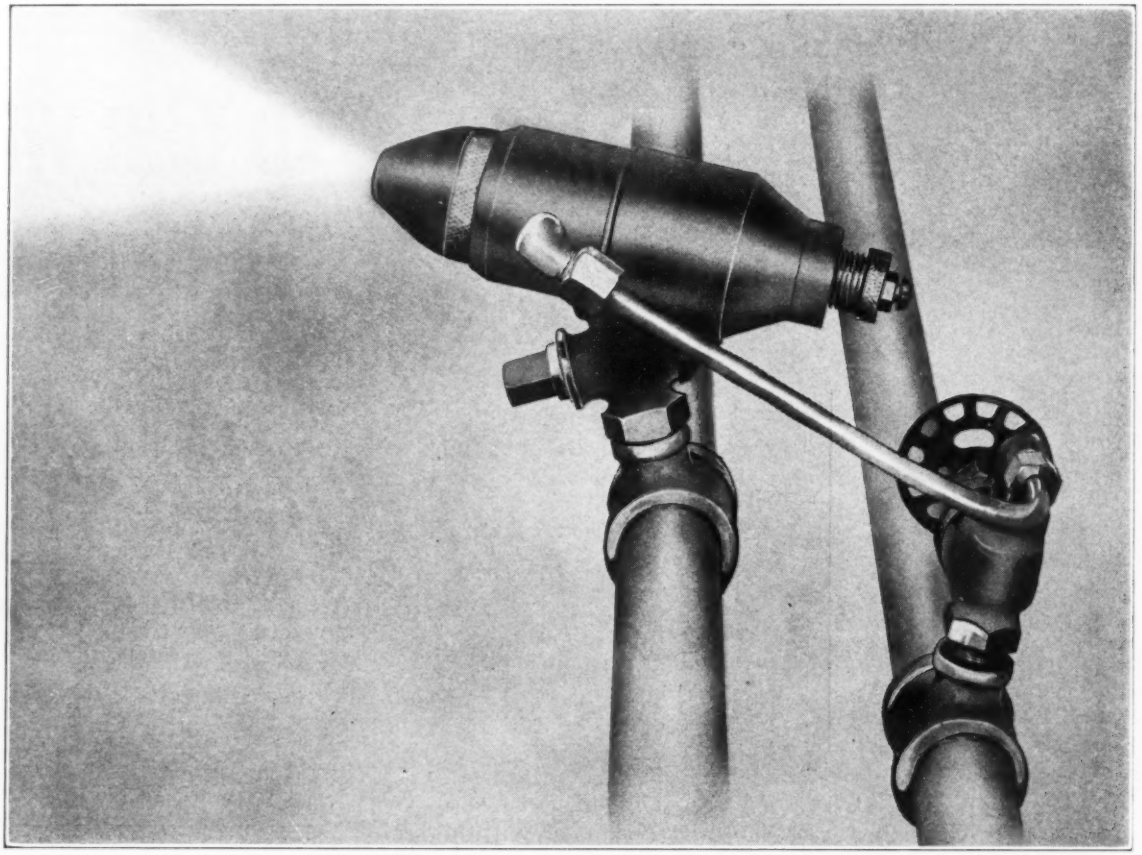
And combinations with all types of solvents.

WOLF BRAND PRODUCTS

JACQUES WOLF & CO.
Chemicals PASSAIC, N. J.

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn.

A New *RIHCO* Humidifier Head That Cuts Power Cost in Half



Rihco has always made humidifier heads that used less power than any other atomizers—heads that gave *"More moisture for less money"*. Their economy was due to the exclusive *Rihco* principle of keeping the water under controlled pressure as well as the air. This enabled them to operate at a lower air pressure than gravity atomizers.

Now *Rihco* presents a head that not only uses less than half the power needed for gravity atomizers, but operates at the same air pressure as the gravity heads.

Think what this means to a mill that now has a gravity atomizer system and needs more humidity! Simply take out any number of ordinary gravity heads and replace with twice as many *Rihco* Type B heads and a simple control valve to regulate the water pressure.

Without changing the compressor or the motor or the water or air mains, the *Rihco* Type B heads can give up to twice as much humidification with no increase in any operating cost, except the additional water used. In a mill adequately humidified, replacing with *Rihco* Type B heads will cut the power bill in half.

Southern Selling Agents

AldricH MachinE

Greenwood, WorkS South Carolina

DU PONT
REG. U. S. PAT. OFF.
AVITEX
REG. U. S. PAT. OFF.
TEXTILE
FINISHING AGENTS

BILL: You know, I've been wondering the same thing, John. Talked to the foreman yesterday about getting brighter, sharper colors on our fabrics. Now that you speak of it—he suggested "Avitex," too!

JOHN: Well, you know, I'm kind of a skeptical guy. But the other day I saw some fabrics that had been treated with "Avitex" finishing agents—and believe me, you could see how the drape, fullness of hand and sharpness of color had been stepped up. That set me to thinking. Then I ran across this ad today . . .

BILL: Says here in the ad that "Avitex" treated fabrics resist air oxidation. No danger of yellowing, rancidity, or unpleasant odors, even over a long period of time. Why, that alone should make customers want our fabrics! What do you say we have a Du Pont representative come in and tell us about "Avitex"?

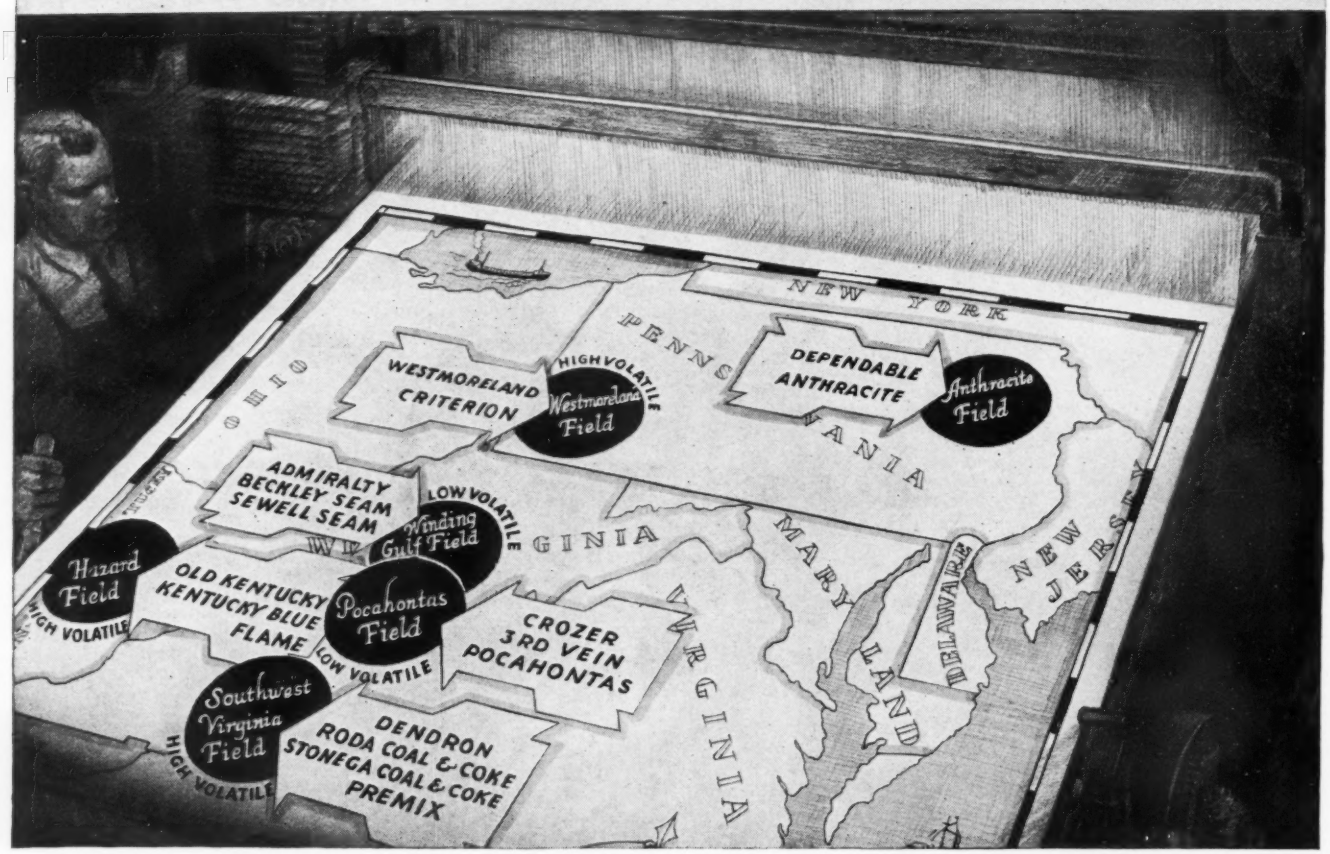
. . .

Our technical staff is at your service. Feel free to write.

E. I. DU PONT DE NEMOURS & CO. (INC.), FINE CHEMICALS DIV., WILMINGTON, DELAWARE

Sales Offices: Boston, Mass., Charlotte, N. C., Chicago, Ill., New York, N. Y., Philadelphia, Pa., Providence, R. I., and San Francisco, Calif. Represented in Canada by Canadian Industries, Ltd., Box 10, Montreal, Quebec, and 372 Bay Street, Toronto, Ont.

DESIGN *for* BURNING



A Pattern of POWER and PROFIT

Admiralty Coal · DEPENDABLE ANTHRACITE · DENDRON · CRITERION COAL · RODA · STONEGA · Old Kentucky · CROZER · PREMIX STOKER · GENCO

While it is no doubt recognized generally, that all coal is not alike . . . only those who have adopted the specific coal of the right analysis for a given purpose, can be completely aware of the operating economies offered by the right coal.

The brands of coal available through General Coal each offer individual characteristics. A study of your power needs and facilities will disclose the one that is best and most economically suited to your plant. The service conveniences offered by General Coal's strategically located offices assure an additional advantage that means increased profits to you.

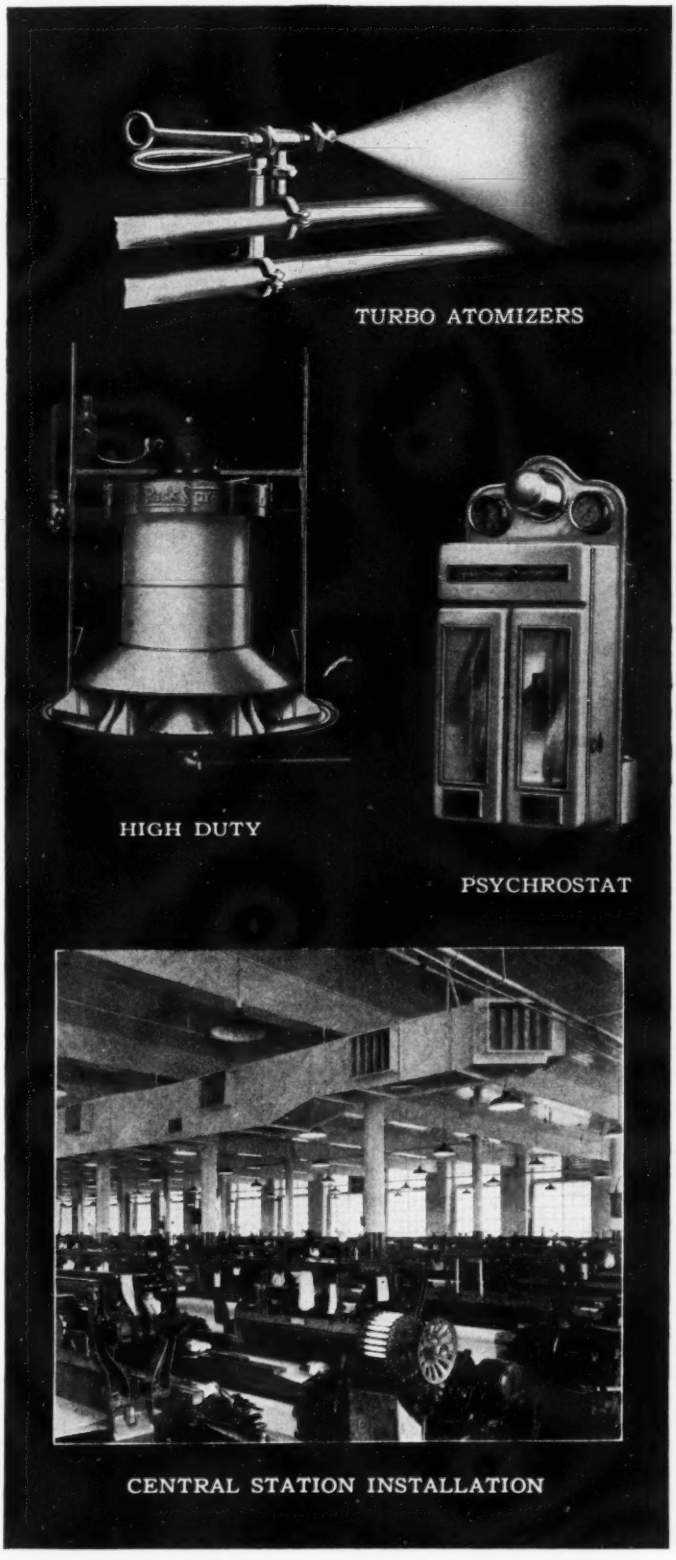
GENERAL COAL COMPANY

PHILADELPHIA, PA.

BOSTON · CHARLOTTE, N. C. · DETROIT · CINCINNATI · NEW YORK · CHARLESTON, S. C. · PITTSBURGH · BUFFALO

GENERAL COAL

NO HUMIDIFIER HAS EVERYTHING



but . . . every humidifier has something

That is why we make a complete line. That is why we make every practical type of humidifier unit. Atomizers, no bigger than a Gillette. Central Stations as big as a penthouse.

They are carefully designed . . . and made.

Determined by long experience, units are selected, systems are laid out and installed for just one purpose: TO DO YOUR JOB IN THE BEST AND MOST ECONOMICAL WAY.

There is a right humidifying unit, a right layout, a right kind of automatic regulation best suited to your needs. Get these and you get everything your Air Conditioning investment can bring.

PARKS *Certified* CLIMATE

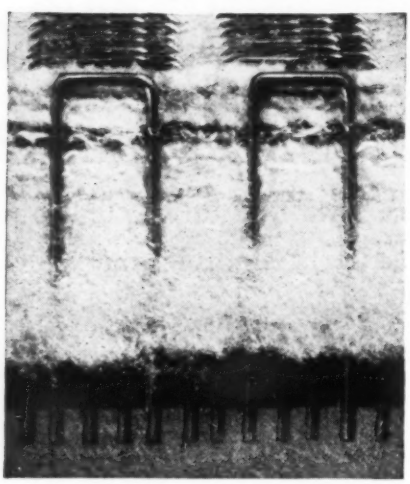
PARKS-CRAMER CO • FITCHBURG, MASS. • CHARLOTTE, N. C.

TUFFERIZED Card Clothing

PATENT APPLIED FOR

is as uniform as the Georgia State All Girl Military Band

Georgia State Girls' Military Band—Organizer and Leader, Colonel Jack Taylor



Microphotograph shows how Tufferized Card Clothing wires seat square, flat, and firmly into the foundation with wires parallel..even in length..spaced uniformly

NEW methods in the preparation of TUFFERIZED Card Clothing make wires stand in military formation. Arranging TUFFERIZED Card Clothing requires attention to measure, pitch, harmony and unity. There can be no discordance. Every wire must be straight, even in length, and uniform in spacing. Every crown must be square with short arc in corners to fit flat and firmly into the famous *patented* TUFFER foundation to produce good performance for you.

The improved TUFFERIZED Card Clothing fits firmer on your rolls and permits more accurate setting from beginning to end of your card. TUFFERIZED Card Clothing needs less grinding and remains in positive position for longer service.

Write for additional information or ask our representative

HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.

Southern Plants: Atlanta, Ga.; Gastonia, N. C. **Branch Offices:** Philadelphia, Dallas

Canadian Agents: Colwool Accessories, Ltd., Toronto 2, Canada

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Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strikles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted Eye and Regular Wire Heddles.

Do the lubricants you are using possess the *Essential Qualities* you need?

This sensitive machine in the Gulf laboratory is used to measure differences in friction for oils applied to bearing surfaces in various ways. It also shows how much of the qualities popularly known as "oiliness" and "film strength" an oil possesses.

Effects of slight differences in oil quality, readily demonstrated by Gulf Research technologists, may have a great influence on the profitable operation of your machinery.

TWO oils may look exactly alike, may have the same "specifications." But, subjected to high operating temperatures, one may depreciate more rapidly than the other and fail to protect bearings against wear and replacement.

How can you be sure you are using lubricants which possess the essential qualities modern research and advanced refining methods have made possible today? Ask a Gulf engineer to check over your equipment and recommend the oils and greases exactly suited to each bearing, gear, and moving part. Then see that his recommendations are adopted. Thus you can insure smoother machine operation, greater productivity and lower maintenance costs for all your equipment—benefits that cannot be predicted in an oil specification.

In 30 states from Maine to Texas, Gulf offers this cost-reducing lubrication service to public utilities, railroads, industrial and marine operating companies. More than 1100 Gulf warehouses make these higher quality oils and greases quickly available to you. Write or phone your nearest distributing point today... Gulf Oil Corporation—Gulf Refining Company, Gulf Building, Pittsburgh, Pa.

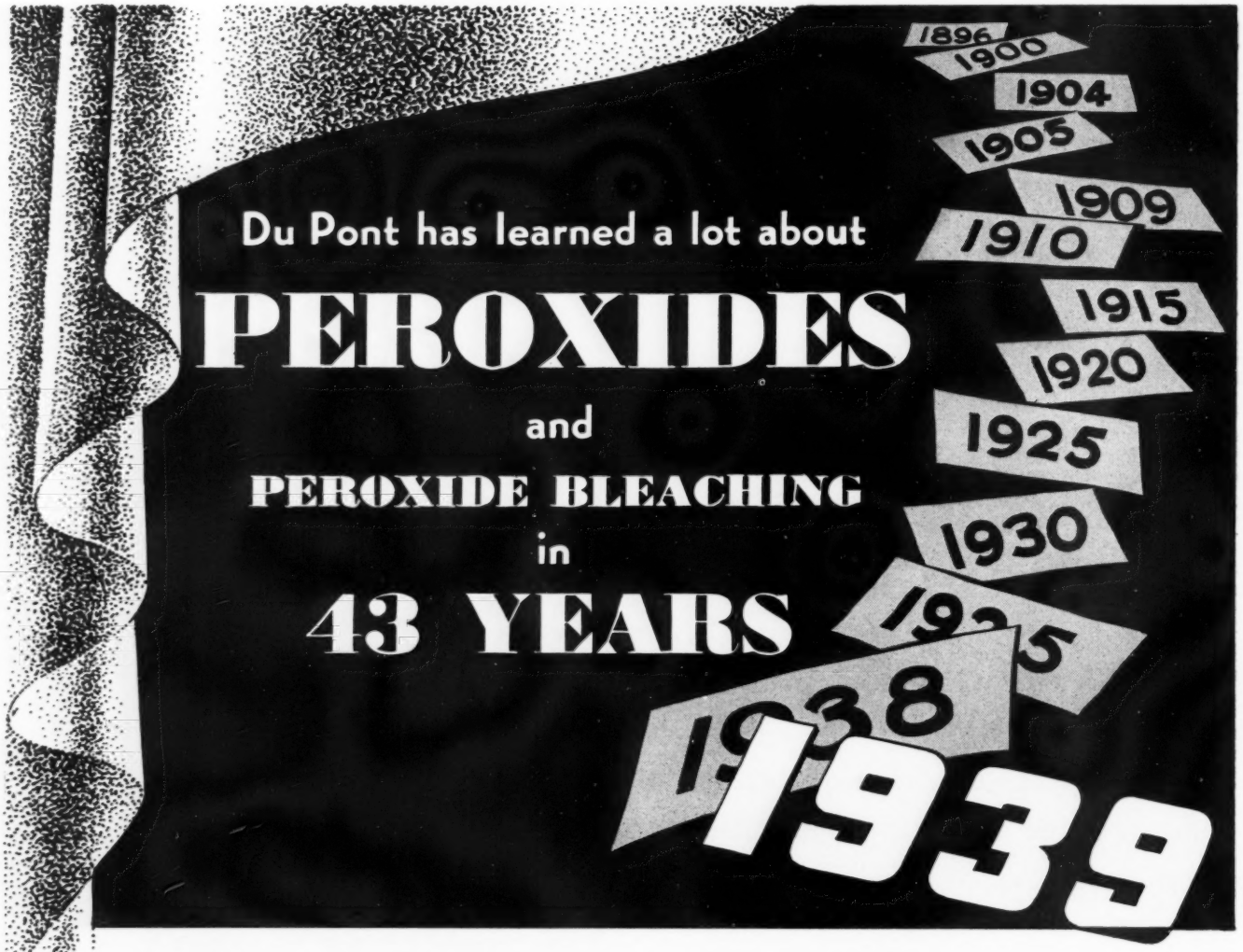
Maintenance Costs Reflect Lubrication Efficiency

A large textile operator says: "We've completely eliminated vibration in our large twister spindles since changing to Gulfgem Oil for spindle lubrication. Our production has been greatly improved and maintenance costs reduced."

The superintendent of a large Diesel power plant says: "We're saving $350.00 per month—sliced from our maintenance bill since we accepted this Gulf engineer's recommendations and placed Gulf's higher quality Diesel oils in service."

GULF INDUSTRIAL LUBRICATION

ALSO A COMPLETE LINE OF FUEL AND FURNACE OILS



Du Pont has learned a lot about

PEROXIDES

and

PEROXIDE BLEACHING

in

43 YEARS

This wide experience can be useful to you with your individual problems

Pioneering . . . developing new processes . . . modifying routine processes to meet changing needs . . . keeping pace with current bleaching demands created as the result of the introduction of new fibres and fabrics . . . that's the record of the du Pont Company in Peroxide Bleaching for the past 43 years.

The du Pont pioneering - research in the laboratory and practical applications in the plant - is constantly going on, with benefits to the textile industry.

If you will lay your specific problems before us, we will gladly work with you. Our technical service men talk your language. Call on us.

DU PONT
REG. U.S. PAT. OFF.

PEROXIDES

ALBONE*
Du Pont Hydrogen Peroxide
100 vol. Electrolytic

DFF†SOLOZONE*
(Du Pont Sodium Peroxide, dustless and free flowing)

SODIUM PERBORATE

* Reg. U. S. Pat. Off.
† Trade Mark.

DU PONT
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The R. & H. Chemicals Department
E. I. DU PONT DE NEMOURS & COMPANY (INC.)
Wilmington, Delaware

District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

Lower *power* costs, lower *lubrication* costs and fewer operating interruptions are reasons for the *continued* preference for STANDARD OIL LUBRICANTS by Southern textile mills... If your machinery is requiring too much power, too much oil or too much maintenance —see a Standard Oil Engineer

STANDARD OIL COMPANY

INCORPORATED IN KENTUCKY

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
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Telephone: AShland 4-8650

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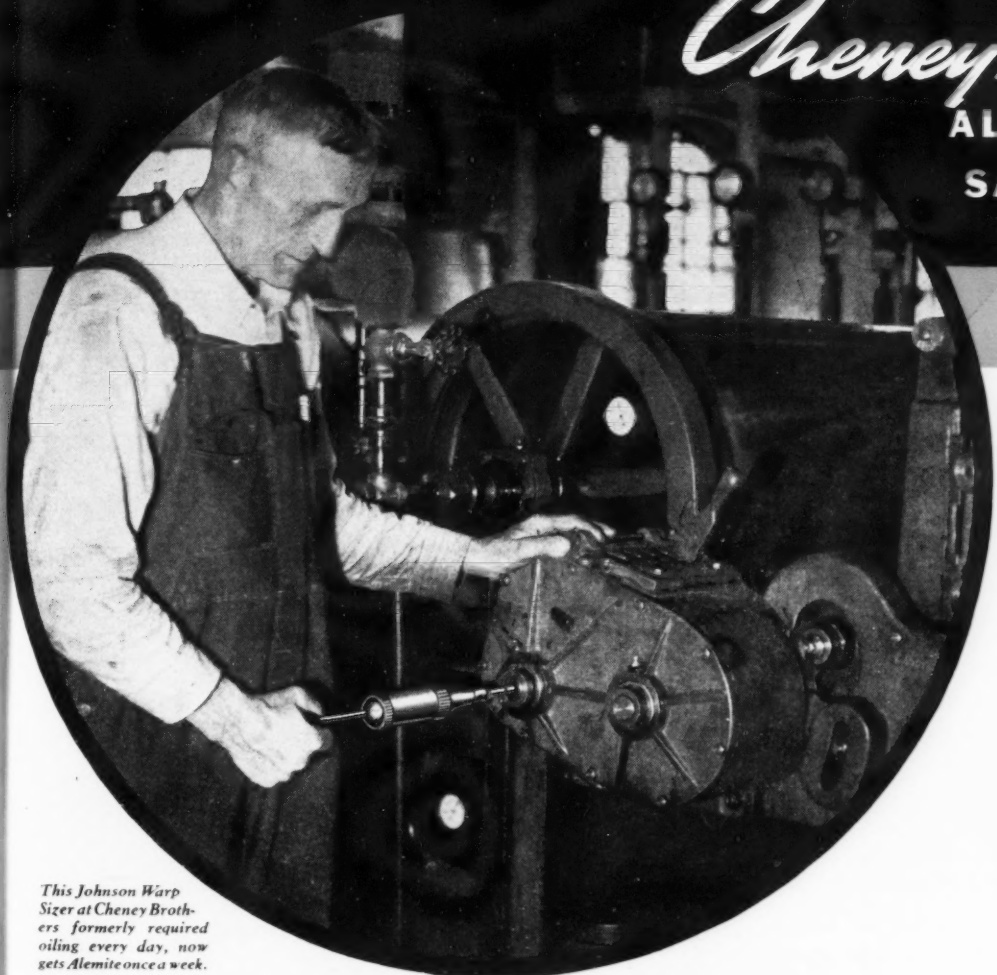
For Manufacturers and Merchants

Inquiries as to our services solicited

ESTABLISHED 1840

Dependable Lubrication ONCE A WEEK Costs Less than HAPHAZARD Oiling Every Day!

Cheney Brothers FIND ALEMITE LUBRICATION SAVES TIME and MONEY



This Johnson Warp Sizer at Cheney Brothers formerly required oiling every day, now gets Alemite once a week.

SQUIRT goes the oil can, aimed at the general direction of the lint-filled oil hole. Some of the oil *may* get into the bearing. Some of it does run down on the machine. Often it gets on the product *with expensive contamination waste.* Cheney Brothers are among the thousands of textile mills which have turned to clean, fast, dependable ALEMITE LUBRICATION to safeguard bearings and end contamination expense.

"No more contamination of calfskin rolls or product when we use Alemite Lubrication on front roll stands!" . . . *"No bearing failures in four years since using Alemite Guns and Lubricant on Whitin Combers!"* . . . *"Our new Express 12-Strand Mill is Alemited once a week—whereas we used to oil it twice a day!"* . . . *"We find machines getting Alemite Lubrication give us smoother weaving and better 'take-up' with fewer 'seconds'!"*—These are a few of the enthusiastic comments we receive from textile mills.

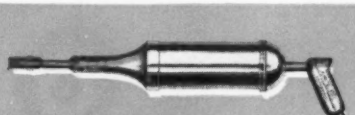
Alemite Lubrication on your machines will safeguard bearings, cut maintenance costs, and avoid contamination. There is an Alemite System, *power or manually operated,* to fit your requirements exactly. Cost is small. Installation is quick and easy. Write today for our latest catalog!

ALEMITE

REG. U. S. PAT. OFF.

A Division of Stewart-Warner Corporation
1884 Diversey Parkway, Chicago, Illinois
Stewart-Warner-Alemite Corporation of Canada, Ltd., Belleville, Ontario

WORLD'S LARGEST MANUFACTURER OF LUBRICATION PRODUCTS



ALEMITE HYDRAULIC HAND GUN MODEL 5256

This gun, shown in use in above photograph, locks fast to Alemite Hydraulic Fitting on the machine, makes a leak-proof seal which prevents any leakage of lubricant. Fitting is closed against lint and grit at all other times. Gun fills through handle from Alemite Filler Tank shown at right.

ALEMITE FILLER TANK—6425

Holds 35 lbs. lubricant; filled directly from original drum; fills hand guns with a few strokes of pump. Keeps lubricant clean, saves running back to drum for refilling hand guns.

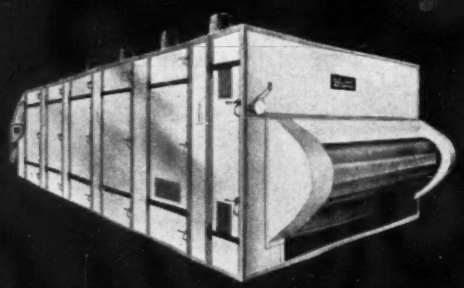
ALEMITE 25-LB. ELECTRIC POWER GUN MODEL 6190

Delivers viscous or semi-solid lubricants at 12 oz. per minute under pressure of 4500 to 5000 lbs. per sq. in. Heavy duty universal motor; easily portable; complete with hose.

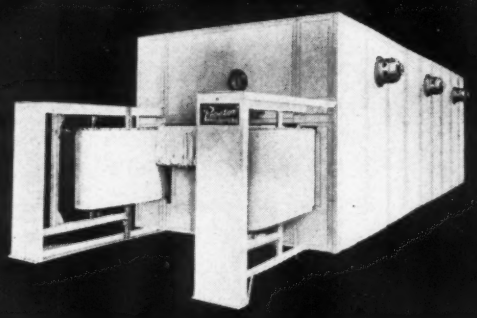
ALEMITE 25-LB. AIR-OPERATED POWER GUN MODEL 6184

Operates on 80 to 200 lbs. air; delivers plastic lubricant at 33 times air pressure used. Comes complete with hose. Easily portable. Ruggedly built for hard use.

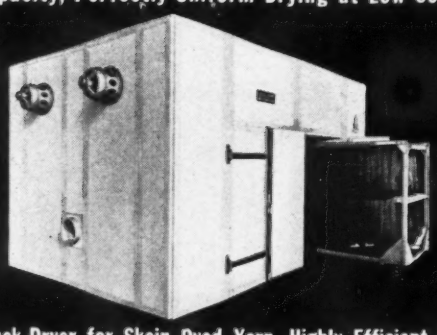
Modern PROCTOR DRYERS



Speedy, Compact Dryer for Cotton and Wool Raw Stock, Rayon Staple Fibre, Linters, Acetates, etc.

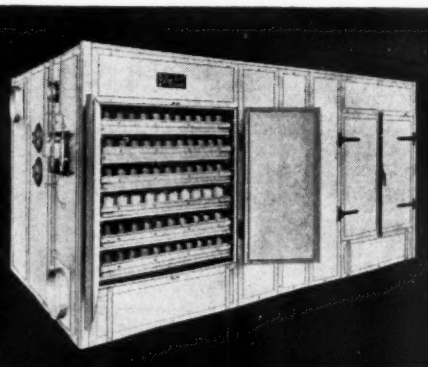


Skein Yarn Dryer with Traveling Skein Protector. High Capacity, Perfectly Uniform Drying at Low Cost.



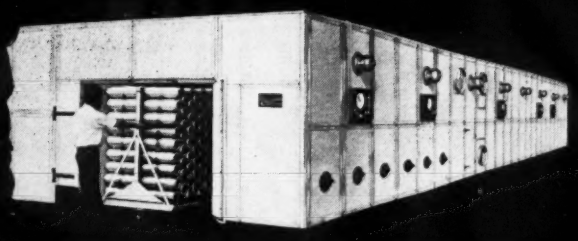
Truck Dryer for Skein Dyed Yarn. Highly Efficient Air Circulation, Direct Motor Drives, Controlled Uniformity.

Modernizing with new Proctor Dryers is today more profitable than ever before. By unique new means of concentrating the drying medium, the Proctor organization has made possible astoundingly high production rates in exceedingly compact machines. This means important savings in time, steam, motive power and floor space. Equally important is the fact that the quality of dried products coming from Proctor Dryers is unvaryingly of the very highest.

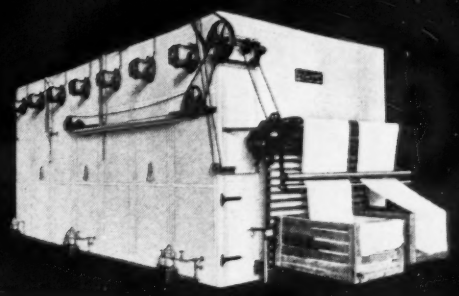


Dryer for Package Dyed Yarn. Assures Uniformly Perfect Drying. Is Speedy, Compact and Very Economical.

PROCTOR & SCHWARTZ

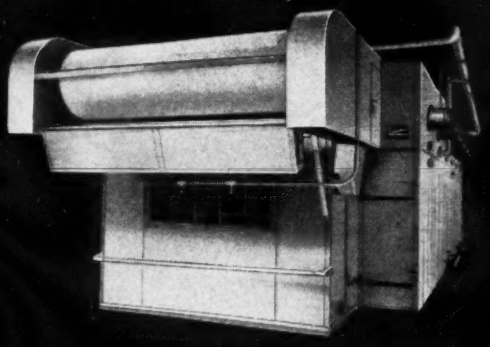


Machine for Drying and Conditioning Rayon in Cakes or on Cylinders. High Capacity, Accurate Results.

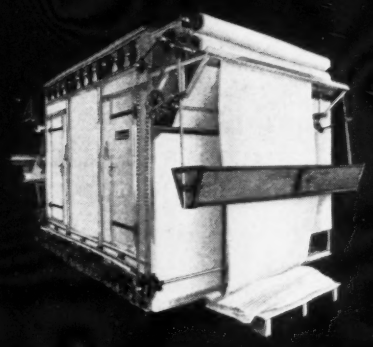


Airlay Dryer for Tensionless Drying of Piece Goods. Rapid, Perfectly Uniform High Quality Results.

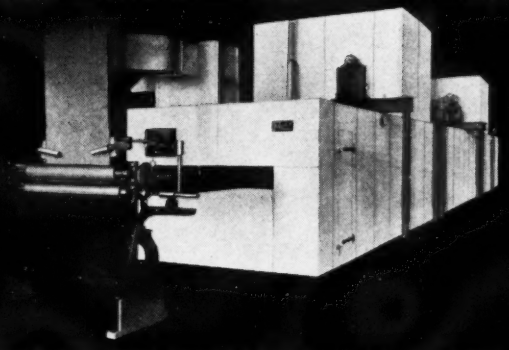
Modern Simplified Design . . . Speedy Production . . . Extreme Compactness . . . Highest Quality Results . . . Unvarying Uniformity . . . Important All-around Savings



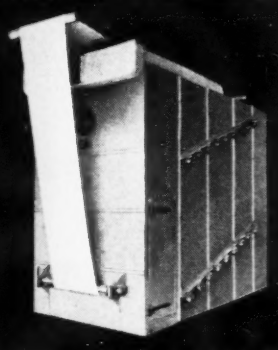
Travel-Air Loop Dryer for Dyed or Fin. Piece Gds. Unique Principle Assures Perfect Uniformity, Unheard-of Production.



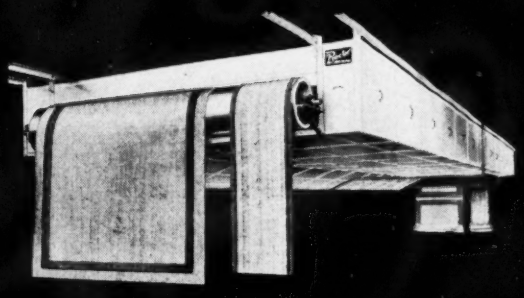
Continuous Cloth Carbonizing System. Cloth Kept Free of Oil Spots, Rust Marks, Shading, Creases, etc.



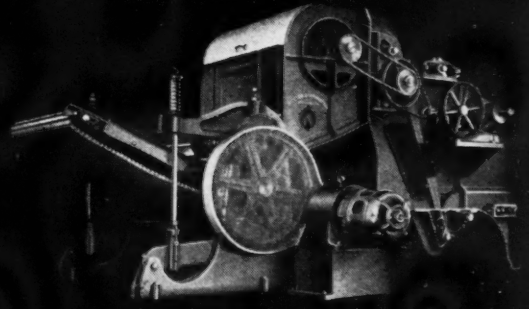
Super-Speed Tenter Dryer. High Capacity for All Weaves, Weights and Widths of Cloth. Economically Operated.



Roller Type Dryer with Individual Motor-Driven Rolls. Is Proving Ideal for Dyed Fabrics of All Kinds.



Carpet Dryer Supplies Continuous, Rapid, Uniform Drying. Is Installed on the Ceiling. Irons Sized Back.



Squeeze Rolls that Supply an Efficient, Continuous Method for the Preparation of Dyed Stock for Drying.

INC. • PHILADELPHIA

ADVANCED DESIGN

assures . . .

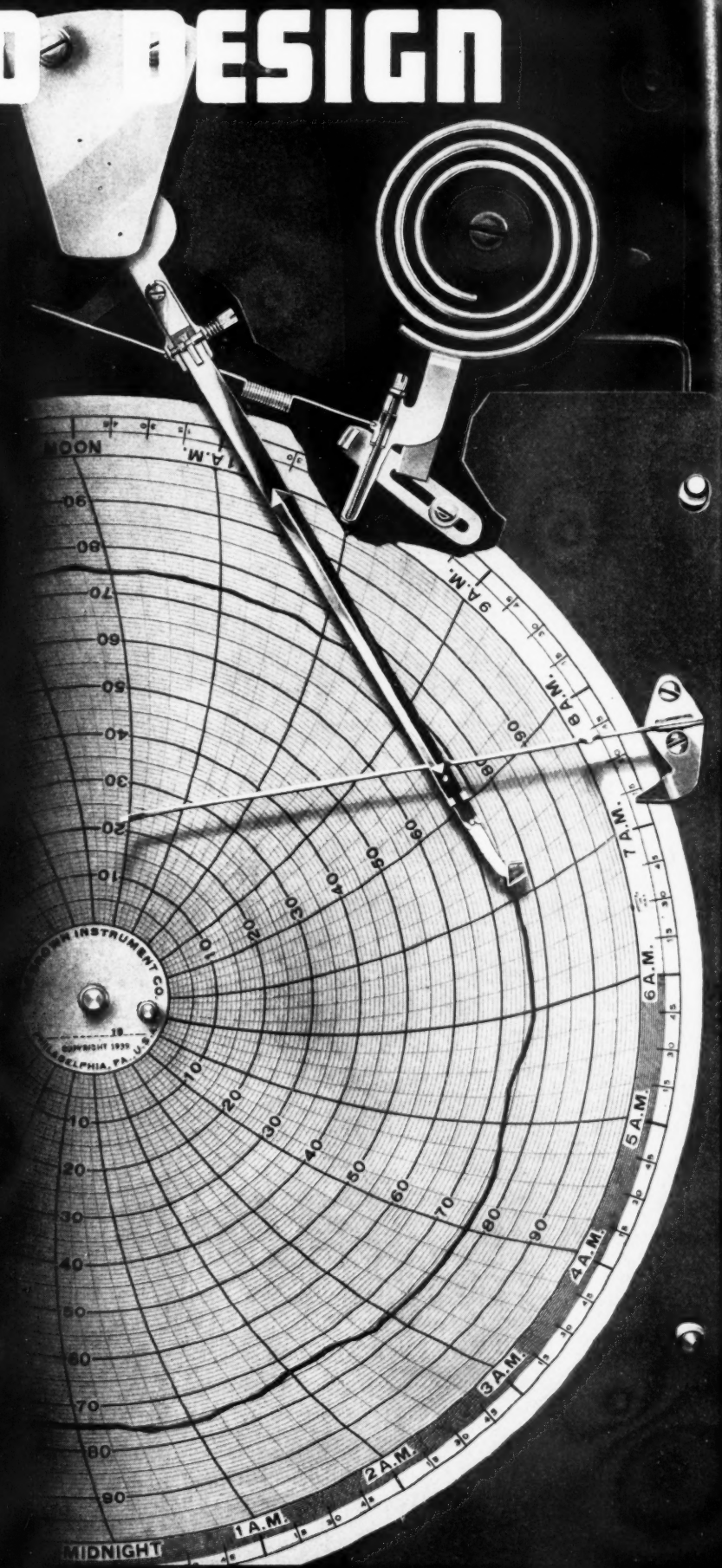
ACCURATE MEASUREMENT *with* SIMPLICITY

GREATER accuracy accompanies the simple operating mechanism of the new Brown Thermometers and Pressure Gauges.

Advanced design includes new, powerful, flat spiral actuating elements of bronze or of alloy steel — heat-treated to insure permanent accuracy and long life. A scientifically controlled method of winding the spiral insures accurate calibration.

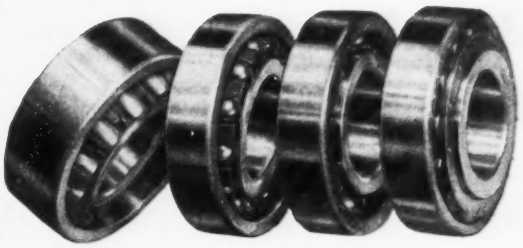
Designed and constructed with high overload capacity. Ample pen torque is provided without sacrificing speed of response. Pen shafts have specially designed bearings and hardened pivots, insuring unhampered pen travel of 4¾". Linkage is reduced to a minimum. Inherent accuracy and response are safeguarded against mechanical failure. Friction, inertia and lost motion are eliminated.

The classic, simple lines of the modern rectangular case, suitable for any style of panel mounting, are in keeping with the simplicity and precision of the mechanism which it contains. The above refinements plus other new developments in Brown Thermometers and Pressure Gauges are fully described in Bulletin No. 2-17. Write for it. THE BROWN INSTRUMENT COMPANY, *a division of Minneapolis-Honeywell Regulator Co.*, Wayne and Roberts Avenues, Philadelphia, Pa. Offices in all principal cities.

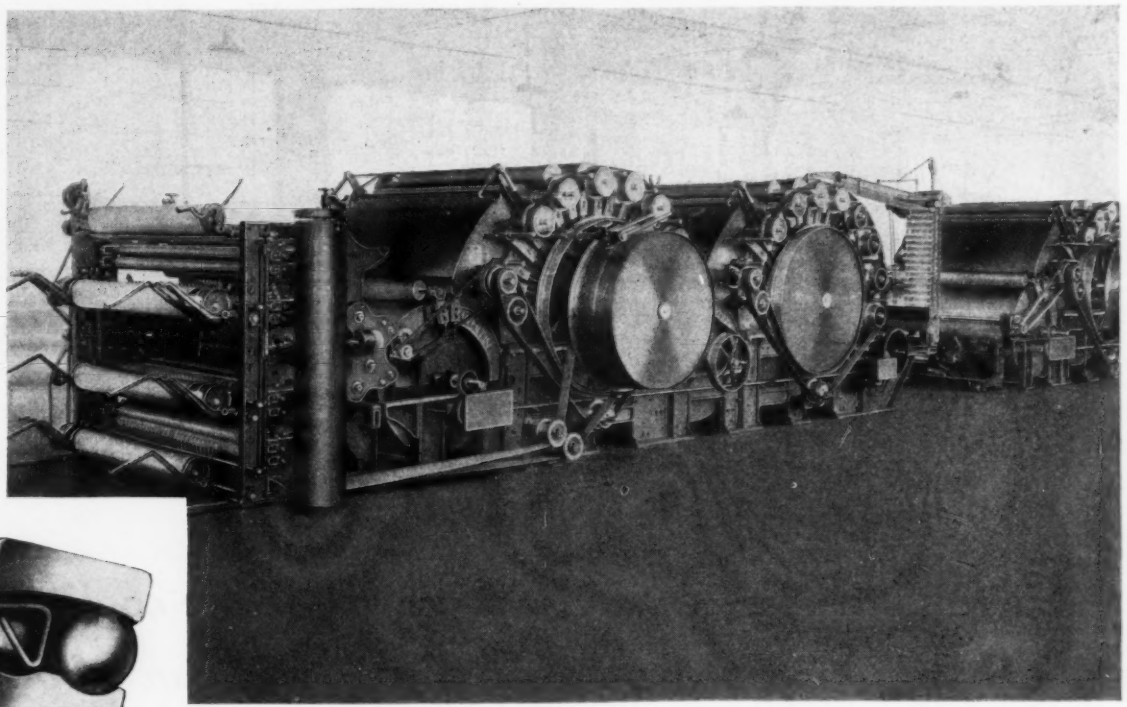


BROWN THERMOMETERS AND PRESSURE GAUGES

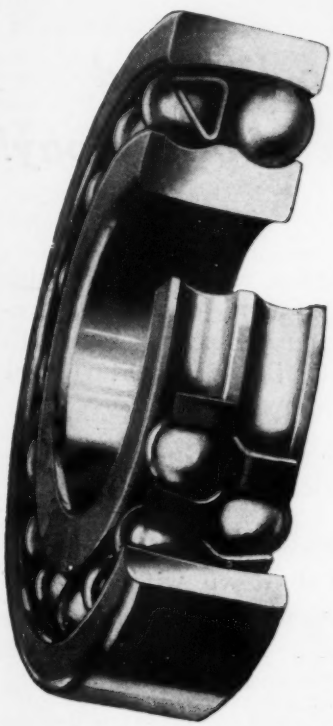
Accurate Measurement with Simplicity



WHITIN WOOLEN CARDS WITH SKF BALL BEARINGS MEAN STEPPED-UP PRODUCTION ALWAYS



● *Built by Whitin Machine Works.*



WHEN SKF GO *ON* MAIN AND FANCY CYLINDERS AND MOTOR DRIVE COUNTERSHAFTS, BEARING TROUBLE GOES *OUT*

● Freedom from bearing trouble more than justifies the selection of SKF Bearings for this Model "G" Woolen Card built by Whitin Machine Works. By always keeping main and fancy cylinders and the motor drive countershaft in proper alignment, SKF save lost time and lost dollars resulting from production delays.

With SKF Bearings, fire hazards, binding bearings and product spoilage due to lubricant leakage become evils of the past. Always these self-aligning, self-contained bearings insure cleanliness and full capacity under severe misalignment conditions.

The performance records established by SKF Bearings since 1907, when SKF pioneered the application of antifriction bearings to textile machinery, have led textile machinery manufacturers everywhere to use them as standard equipment. When you select SKF Bearings, therefore, you select the *original* textile ball bearings.

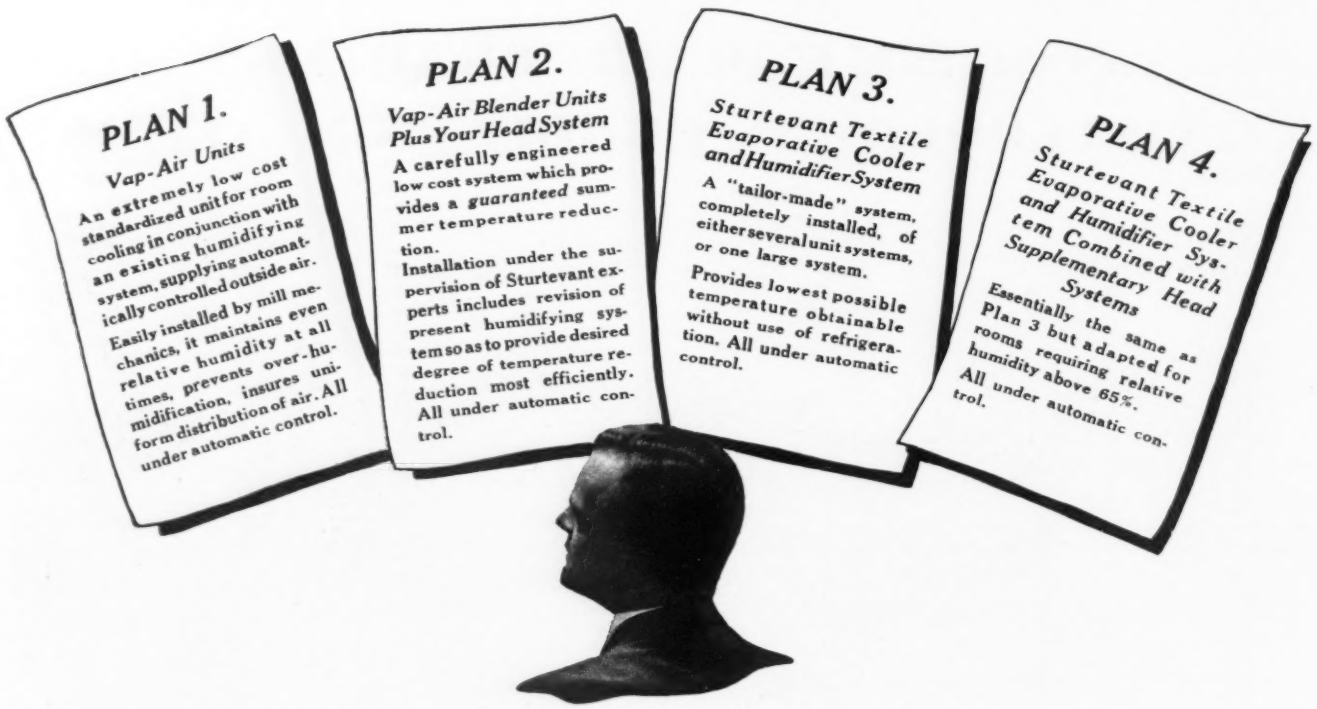
4404

SKF

Ball and Roller Bearings

SKF INDUSTRIES, INC., FRONT ST. & ERIE AVE., PHILA., PA.

Pick the Air Conditioning Plan that fits your pocketbook!


PLAN 1.
Vap-Air Units
An extremely low cost standardized unit for room cooling in conjunction with an existing humidifying system, supplying automatically controlled outside air. Easily installed by mill mechanics, it maintains even relative humidity at all times, prevents over-humidification, insures uniform distribution of air. All under automatic control.
PLAN 2.
Vap-Air Blender Units Plus Your Head System
A carefully engineered low cost system which provides a *guaranteed* summer temperature reduction.
Installation under the supervision of Sturtevant experts includes revision of present humidifying system so as to provide desired degree of temperature reduction most efficiently. All under automatic control.
PLAN 3.
Sturtevant Textile Evaporative Cooler and Humidifier System
A "tailor-made" system, completely installed, of either several unit systems, or one large system.
Provides lowest possible temperature obtainable without use of refrigeration. All under automatic control.
PLAN 4.
Sturtevant Textile Evaporative Cooler and Humidifier System Combined with Supplementary Head Systems
Essentially the same as Plan 3 but adapted for rooms requiring relative humidity above 65%. All under automatic control.

Here is a simple, practical way to make cooling and humidifying improvements--at a cost you can afford to pay!

ARE YOU putting up with "hot spots", motor burnouts, non-uniform quality, and other troubles due to inadequate cooling or humidity—in the belief that the remedy would be altogether too costly for you to consider? If so, you should find the four Sturtevant Plans above of great interest.

It isn't always necessary to install a complete "tailor-made" cooling and humidifying system in order to meet requirements. Many times a less elaborate system, at much smaller cost, will prove adequate.

At any rate, whether you can afford only an extremely low cost "package" unit for circulating controlled amounts of out-door air, or, at the other extreme, a complete, engineered evaporative cooling and humidifying system — your requirements can be exactly met with one of the four Sturtevant Plans above.

Investigate the many advantages which these Sturtevant Plans offer. At your request, our nearest representative will gladly sit down with you and discuss your problem.

Sturtevant
REG. U. S. PAT. OFF.
Puts Air to Work

COOLING & AIR CONDITIONING DIV.
B. F. STURTEVANT COMPANY
HYDE PARK, BOSTON, MASS.
Atlanta Camden Chicago Greensboro
Los Angeles New York

Cooling & Humidification to Fit Your Pocketbook

STARTS WHITER • STAYS WHITER • COSTS LESS TO APPLY • COSTS LESS TO MAINTAIN

DULUX *the mill white that gives...*

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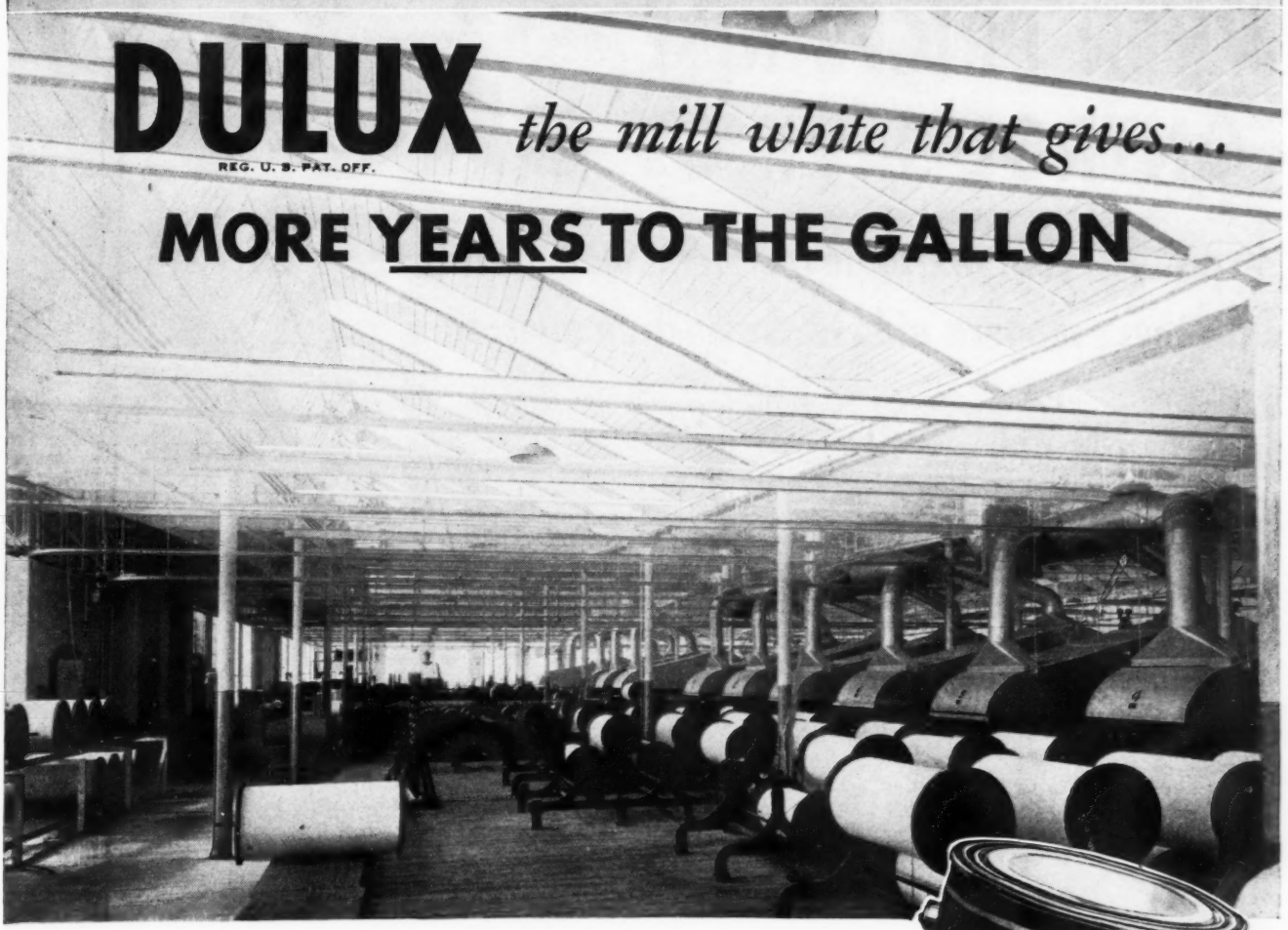
MORE YEARS TO THE GALLON



DULUX not only *starts* whiter than ordinary mill whites . . . it stays white *longer*. It requires fewer repaintings.

Titanium—the whitest pigment known to science—gives DULUX its brilliantly white *start* . . . its ability to reflect more light. And the DULUX vehicle gives the amazing *staying* powers to this tough, durable finish.

Highly resistant to chipping and cracking, DULUX is setting new records for whiteness retention. Its tile-smooth surface stays cleaner than ordinary mill whites, too. And it *washes* without harm.

DULUX is economical

Because of its excellent hiding and good coverage, you will often need fewer gallons per job—a saving of both labor and material.

Send the coupon! We'll send full information about DULUX—the mill white that makes your money go further because it gives "more *years* to the gallon."

SEND FOR THIS FREE BOOK!

DU PONT **DULUX**

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THE MILL WHITE THAT STAYS WHITE

E. I. du Pont de Nemours & Co. (Inc.), Dept. C-119
Finishes Division, Wilmington, Delaware

Please send me complete information about DULUX Mill White—and your new booklet.

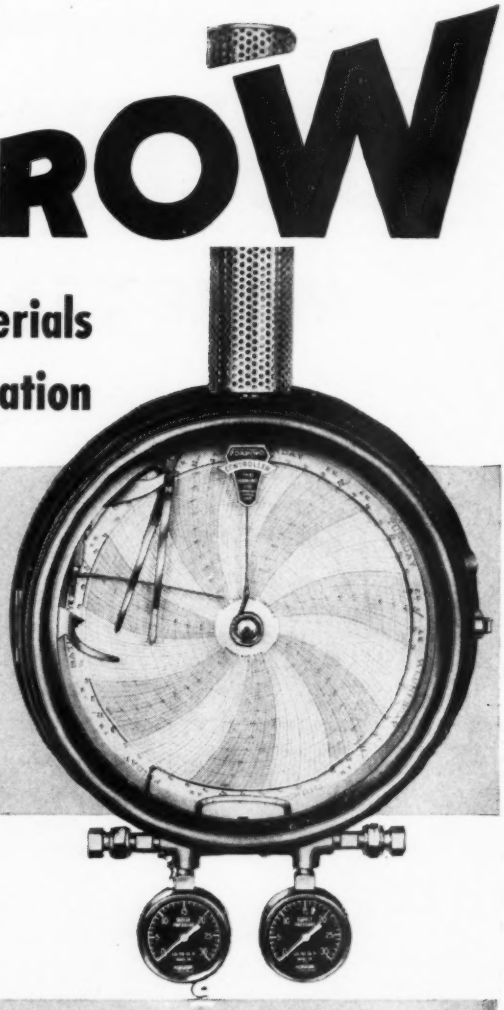
Name.....

Address.....

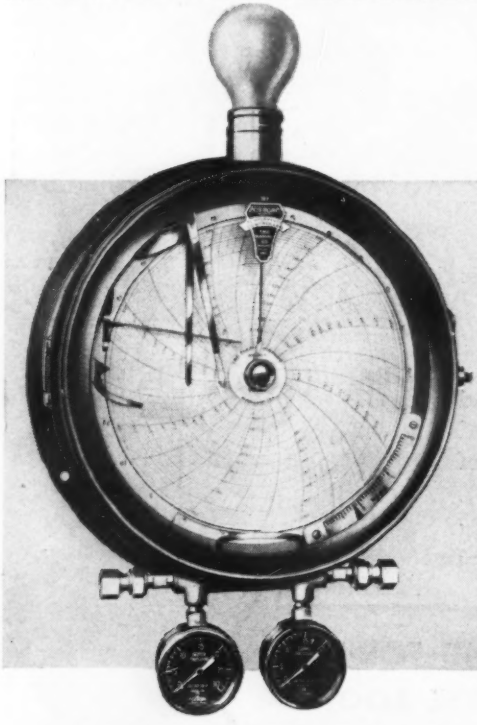
City.....State.....

WHEN PRICES RISE CONTROL SAVINGS GROW

...protect your extra investment in materials with these modern aids to waste-free operation



FOXBORO AUTOMATIC HUMIDITY CONTROL — A uniform plant "climate" means fewer rejects and seconds . . . saves you the cost of wasted materials and wasted time. Why trust so much to hand methods when Foxboro's trouble-free humidity controller can be so quickly paid for out of its own savings? It's a simple, rugged unit engineered by men who know textile applications and operating problems. The Foxboro field man will give you a frank report on how it can be used along with your present humidifying equipment. Why not ask his opinion?



FOXBORO AUTOMATIC TEMPERATURE CONTROL — Are there operations in your plant where processing temperatures still hinge on someone's attentiveness to proper manual adjustment of valves? Then, you're risking more money every day as materials' prices rise. And on a unit-of-production basis, it will cost you less than ever before to put temperatures under accurate, automatic regulation with Foxboro Controllers. » » » The Foxboro "open-and-shut" type of control handles every normal textile plant temperature problem by a simple, positive-acting pneumatic system that can generally be substituted for manual control methods without delaying production schedules. Moreover, Foxboro Controllers equipped with an elapsed time device have been specially adapted to dye machine control and other applications where control of processing cycles is required. You get sure-fire protection and save operating time.

FOXBORO

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RECORDING | CONTROLLING • INDICATING

Instruments

Certified Accuracy and Response

TEMPERATURE • LIQUID LEVEL
PRESSURE • FLOW • HUMIDITY

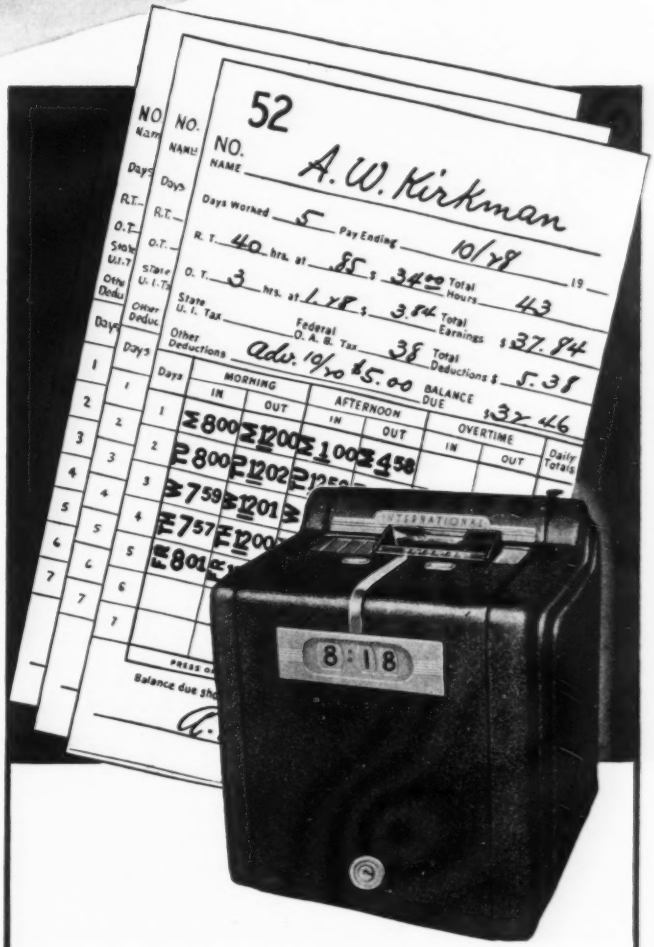
Whatever your control problem, there's a Foxboro instrument for the job. Equally important, Foxboro field men know *applications* as well as instruments. They're just as anxious as you are to supply the simplest and most trouble-free instrument set-up for the particular combination of conditions existing in your plant. Why not see what they have to offer in the way of waste-insurance? Or if you prefer, write for descriptive bulletins. **The Foxboro Company, 18 Neponset Avenue, Foxboro, Massachusetts, U.S.A.** Branch Offices in 25 Principal Cities.

FOR ACCURATE TIME RECORDS

To ***know exactly how much*** time each employee spends in your plant is to have a trustworthy safeguard against payroll losses, disputes, and ill-will. Pencilled time records are subject to too many human shortcomings to be depended upon for the accurate information you need... particularly in these days of increasing wage rates and shrinking work weeks.

Dependable accuracy is one of the most important advantages of using International Attendance Time Recorders. These modern, completely automatic devices provide legible, printed records that show the exact minute of every arrival and departure time . . . the same accuracy day after day, week in and week out. *Both you and your employees* will find many profitable benefits when payroll figures are based on time records that are accurate beyond all question of doubt.

These facts are of vital interest to every employer . . . an International representative in your community will be glad to explain what industry is doing today to eliminate payroll confusion.



EMPLOYERS like International Time Recorders because they give, in convenient form, accurate legible and permanent records for personnel management.

EMPLOYEES like International Time Recorders because they give an honest, clear record of their arrival and departure times, eliminating partiality, payroll errors and disputes.

INTERNATIONAL BUSINESS MACHINES CORPORATION

World Headquarters Building
590 MADISON AVENUE, NEW YORK, N.Y.

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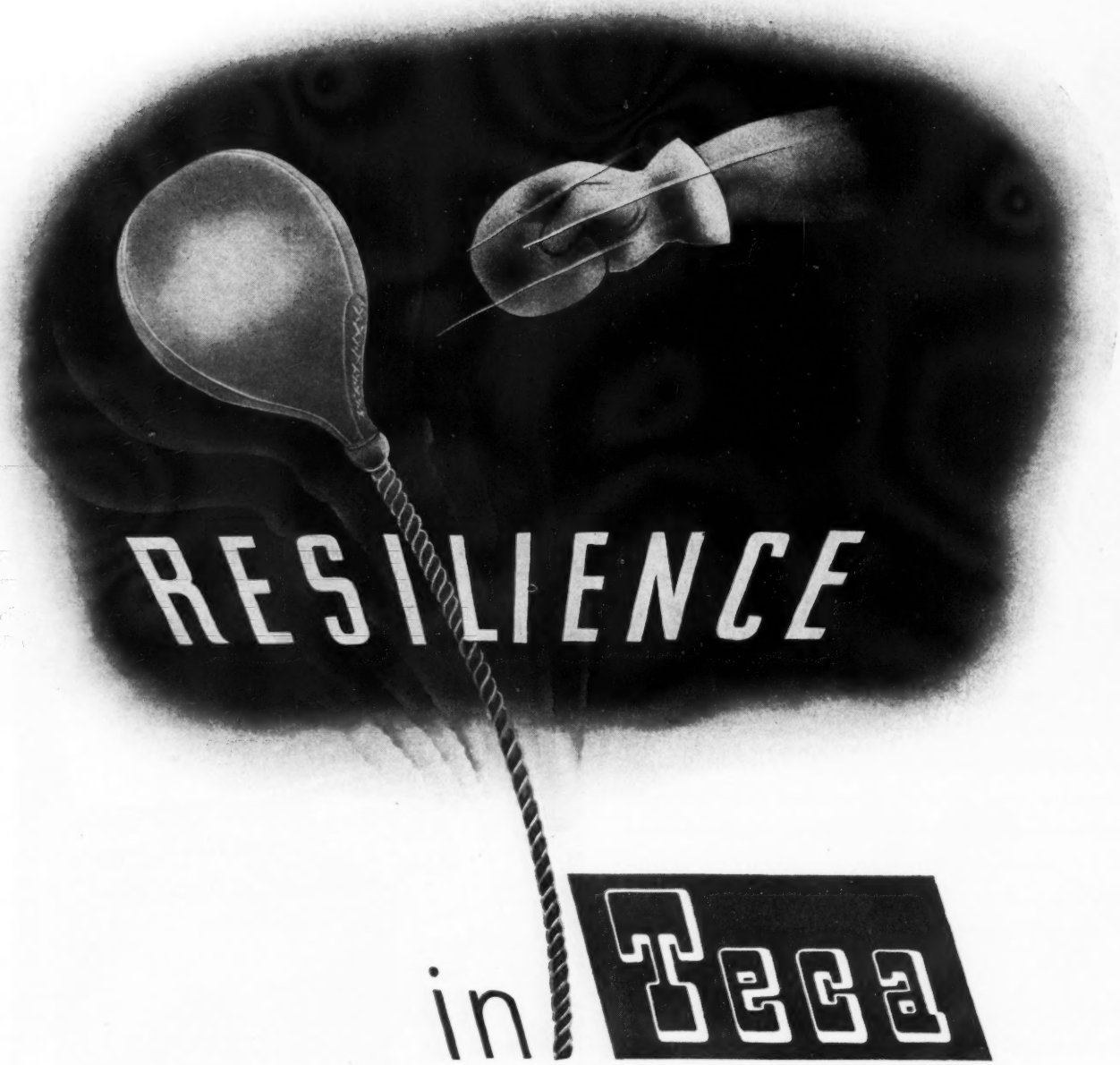

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COTTON
SERVING THE
Textile Industries

NOVEMBER, 1939
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SHORTS AND REMNANTS

Thanks, Mr. Turner

"Occasionally we write you, telling how much we appreciate COTTON, and the efforts you are making to keep the textile industry well posted in every line. All of your articles are always interesting, especially OLD TIMER. In the September issue we found the article 'New Spinning Frames at Dallas' very interesting."

JAMES L. TURNER
Supt., Dominion Yarns, Ltd.,
Welland, Canada.

◆

And You Too, Mr. Elliott

"I regret my delay in writing you, as I intended writing you before and complimenting your fine work and the fine article published by COTTON magazine. I have heard nothing but praise of it all the way from Maine to Alabama. It was indeed a fine job and we are all exceedingly pleased with the entire matter."

GEORGE S. ELLIOTT
Sec.-Treas.,
The Dallas Mfg. Co.,
Huntsville, Ala.

(Mr. Elliott is referring to the article "New Spinning Frames at Dallas Embody Many Modern Features" which appeared in the September issue.)

◆

Our Apologies, Mr. Kell

"Speed Austin suggested that I write to inform you that my name is not Hell but Kell. How about making that little change —my family will appreciate it."

R. E. KELL
General Manager,
Grey Hosiery Mills,
Bristol, Va.

(Our stenographer must have been in a bad humor when she wrote Mr. Kell and incorrectly spelled his name. We really did not have him confused with the German family named Hell who had twin sons whom they named "What The" and "Go To".)

◆

Leno Weaving

"We are in need of some definite information about Leno Weaving. If you have a publication that gives information of this kind, will you please mail it to us?"

L. O. TALLEY
Foreman, Weaving Department,
Monticello Cotton Mills Co.,
Monticello, Ark.

(There is available a reprint of several articles on "Leno Weaving and Designing" that appeared in COTTON several years ago.)

◆

Spinning Room Practice

"Mr. Stuart F. Brown of our company has asked me to see if you have about six copies of the articles on Rings by Pratt that were recently published in COTTON. If these are available please mail to our Whitinsville office."

H. R. BROCK
Southern Agent.
Whitinsville Spinning Ring Co.,
Whitinsville, Mass.

(The articles referred to are the five installments of "Spinning Room Practice" by Horace L. Pratt which have appeared in the March, April, May, July and August issues. The four remaining installments will appear in forthcoming issues.)

Old Timer

"We are interested in securing volumes of "An OLD TIMER Says" that have been consolidated and of which we understand you have reprints."

WILLIAM D. STOCKTON
Personnel Director,
Callaway Mills,
LaGrange, Ga.

(The OLD-TIMER articles have appeared continuously in COTTON since 1922. Those appearing in 1922, 1923 and 1924 were put up in booklet form as Volume One. Those appearing in 1925, 1926 and 1927 were put up as Volume Two. Subsequent articles have not been put up in book form.)

◆

From Australia

"Please find enclosed coupon on which I have made application for several booklets of interest to me so kindly offered by your good selves. As manager of the circular knitting and winding departments I am going to find this overseas information of great interest. I thank you for this opportunity and sincerely hope they contain a wealth of information such as we receive in our issues of COTTON."

R. T. ELLIS
Prestige, Ltd.,
Victoria, Australia.

(Mr. Ellis requested that we have sent him several booklets listed in the "Helpful Booklets Free" section of COTTON. This section appears as a monthly feature in COTTON and we regularly receive some 3,000 or 4,000 requests each year for the booklets listed therein.)

◆

Cannon Mills Company

Motorists on Route U. S. 21 and passengers on main line Southern trains seldom fail to see this Cannon Mills sign atop one of the plants at Kannapolis, N. C.

Cannon Mills Company, largest manufacturers of towels in the world, operate plants in Kannapolis, Concord, China Grove, Rockwell and Salisbury, N. C., and at York, S. C. These plants house over 460,000 spindles and approximately 12,000 looms. Sheets, towels crashes, and other products are also manufactured at these plants; while the well known Cannon hosiery is manufactured at Wiscassett Mills, Albemarle, N. C.

F. R. Shepherd, Supt. Mill No. 2, A. B. Bradford, Supt. Mill No. 4, J. G. McCachern, Supt. Mill No. 5, L. C. Harmon, Supt. Mill No. 6, E. L. Bolick, Supt. Mill No. 7, K. A. Shinn, Supt. Mill No. 8, J. M. Talbert, Supt. Mill No. 9, F. L. Wilson, Supt. No. 10 and J. E. Norris, Supt. Mill No. 11, are among the Cannon officials who are readers of "Cotton".

SOS

"Will you please give us the names of firms who garnett or chop up manchester bagging and supply it in staple form suitable for spinning into yarn when mixed with cotton or other fibers?"

A. H. DICK
Pres., Louisville Textiles, Inc.,
Louisville, Ky.

(Frankly, we were not able to furnish Mr. Dick with the desired information. However, he has subsequently advised that while he hasn't received definite offerings, he has been in contact with Gilman Bros., Gilman, Conn.; Hamlet Mills Co., Otter River, Mass.; Stoughton Mills, Stoughton, Conn.; Peerless Fibre Co., Cohoes, N. Y.; Troy Waste Mfg. Co., Cohoes, N. Y.; Bolger Bros., Germantown, Philadelphia, Pa., and Fred Whitaker Co., Philadelphia, Pa. Should any of our readers know of firms doing this type work, we would appreciate their advising us.)

◆

No Time Limit

There is no time limit on the value of the articles appearing in COTTON. On July 29, 1939, Mr. A. L. HOWLAND, superintendent, Fickett Cotton Mills, Inc., Whitehall, Ga., wrote:

"I am writing you for information that COTTON carried in 1935 or 1936, reverse twist on speeders and slubbers. If you have that information before you I would like to have a copy of that issue."

The article in question, entitled "Reverse Twist on the Roving Frame," appeared in August 1936 COTTON. It was written for us by Fay H. Martin, the outstanding authority on roving frames. This is one of quite a number of articles Mr. Martin has written for COTTON which we have put into a book called "The Roving Frame", which discusses in a practical way such things as draft, twist, lay, tension, etc. "The Roving Frame" is available at $1.00 per copy.

Here is further evidence:

Mr. HERBERT ROSENBERG, of the American Finishing Company, Memphis, Tenn., writes on August 9: "I would appreciate it very much if you could furnish me with reprints or tears of the two articles 'Mercerization—Its Place in Relation to Other Processes', by J. A. Clark, which appeared in COTTON during August and September 1935."

Readers allied with finishing will be interested to know that we are currently producing a revised and enlarged edition of the book, "Finishing Materials", by Mr. Clark, which will contain everything that appeared in the first edition (long since exhausted) as well as his later contributions on Permanent Finishes, etc.; and the ones on mercerization requested by Mr. Rosenberg.

And the 12 articles on Warp Sizing, by Paul Seydel, which were published originally in 1926 and again, in revised form, in 1935-1936, continue to draw requests for reprints. Mr. E. STEWART, of Valleyfield, Province of Quebec, Canada, and Mr. GUY L. MORRISON, of Penick & Ford, Ltd., Inc., Spartanburg office, asked for them last month.

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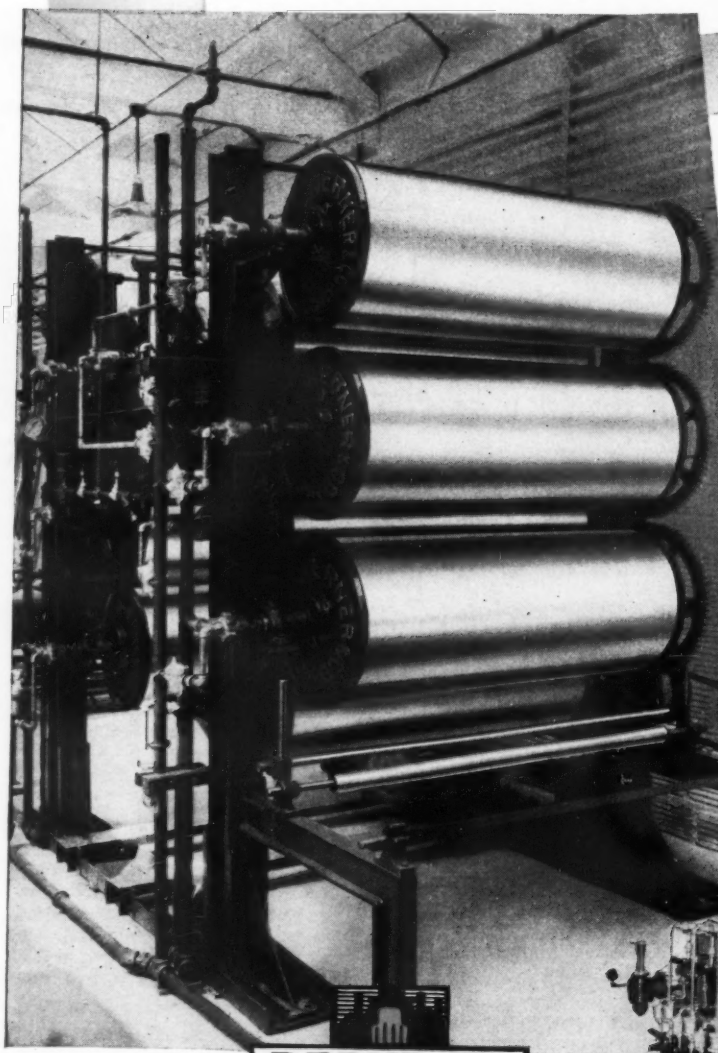

"In addition to saving money with our ENDURO* Stainless Steel dye jigs, we have trimmed our finishing costs still further with dry cans made from ENDURO," says this dyer. "It's a cinch to keep the ENDURO cans spotlessly clean; and since they never corrode or discolor, all danger of spotted goods is eliminated. Moreover, we don't have to pay to have the surfaces of the cans refinished periodically." » » » Full information on ENDURO . . . the *solid* stainless steel that remains immune to all textile solutions . . . stays lustrous indefinitely . . . will be sent on request. Ask, too, for all the facts on TONCAN* (Copper-Molybdenum) IRON . . . the low-cost sheet metal that has the highest resistance to corrosion of any ferrous metal in its price class. It's available in all commercial forms for a host of plant maintenance needs. Write Republic, Dept. CO, at Cleveland today. Republic Steel Corporation, General Offices: Cleveland, Ohio; Alloy Steel Division, Massillon, Ohio.

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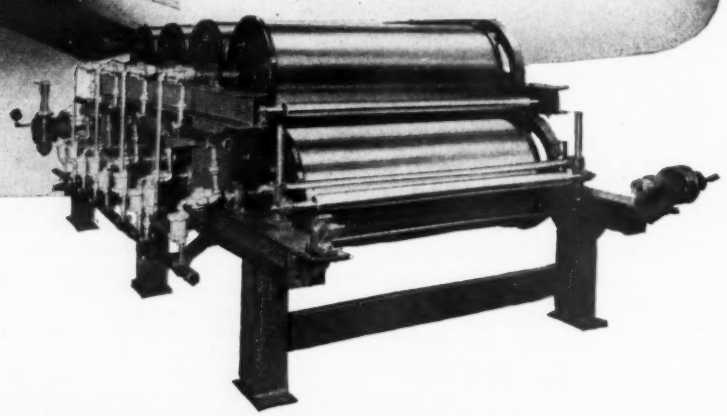

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COTTON
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November 1939 Vol. 103 No. 11

And Now—After Ten Years

THIS FALL marks the 10th anniversary of The Big Crash. Plenty of people know what led up to it, and lots of folks know why the Depression that followed it is still with us, but hardly anybody seems to be sure of what to do about it. Almost any discussion of the Depression and its causes and remedies branches out into consideration of innumerable minor contributory causes, and nobody seems to want to face the fundamental facts that have got to be faced sooner or later.

The Depression was caused by too much expansion, which led to too high prices and finally put too many things beyond the purses of too many people, so that buying power dried up. The post war inflation raised the prices of everything; stocks, bonds, commodities, interest on money, land, houses, labor—everything went sky high. During the deflation period following 1929, most of these prices came down, but not enough to reestablish good business. We still have to pay too much for too many things.

Capital itself has been pretty well liquidated; money being offered at ridiculous interest rates where security is good. Many industries have got back down to brass tacks again. Certainly the textile industry is in this classification. Deflation has been overdone in the textile industry, and we have had too much of the absurd spectacle of intelligent people deliberately accepting orders and manufacturing goods at a loss. The prevailing active market does not alter that fundamental condition. Other industries which operate under a system of free and unlimited competition have also come down to earth, but this coming down is a painful proposition and nobody likes to do it.

A great many financial experts agree that one thing that has been holding us back is the apparent impossibility of stimulating a building boom. Despite the fact that the United States needs at least five million new dwellings, the only way to get these built seems to be for the Government to subsidize them—a dangerous and irrational procedure as it is now being carried out. The Government is permitting home purchases on such a ridiculously small down payment that the nominal owner of the home has so little equity in it that he can wear the newness off of the place and when it needs painting, plastering, re-decorating, or repairs of any kind of a serious nature, he can just pick up and leave with little more compunction than if it were a rented place.

Evidently what is needed to start a real building boom is not only more building, but better values in the buildings. Buildings which cost too much to begin with, but can be purchased for a nominal down payment, and the rest spread over 30 or 40 years, do not appeal to intelligent investors. The kind of people who ought to build, and would build under the right conditions, are not likely to be tempted into paying too much for a house simply because the initial payment is low. They want some value if they really intend to buy something.

There has been plenty of pretty good evidence that the whole building industry is more or less racketized from top to bottom. Numerous building material associations and lumber dealers' associations have been charged with collusion in maintaining artificially high prices on building supplies. Contractors have likewise been accused of collusion in keeping up costs. It is reported that the Federal Government has got its anti-trust sleuths working on some of these cases now, and is trying to break up some of the combinations that they allege have been formed to artificially keep prices up high enough to insure a little revenue on a restricted market. No evidence or allegation needs to be considered with reference to the part that the building trades' unions have had in stopping the building of houses; mere reference to the unions' wage scales is all that is needed.

If the building material dealers, the contractors and the labor unions all conspire to keep building costs so high that there is practically no building, it is easy to see why the Federal Government must continually subsidize such building out of the tax payers' pockets if there is going to be much building.

Everybody seems agreed that there is plenty of idle capital in the United States; many people think there is entirely too much available capital, so that the

AUTHOR'S NOTE: This discussion of fundamental economic conditions was written with deliberate omission of any reference to prevailing war conditions, since the matters discussed are of such vital importance basically, irrespective of artificial and immediate influences of current conditions.

Government is able to borrow too much money too easily for the pursuit of its numerous recovery schemes. Practically every prominent economist or reputed financial expert who has broken into print with remedies for ending the Depression points to the building industry as the probable cornerstone of any real recovery, but there can't be much improvement in the building industry as long as Mr. Average Home-Owner, making about $30.00 or $35.00 a week, has to hire men making $100.00 to $150.00 a week to lay the bricks, saw the boards, drive the nails, and do the other things necessary to put his house together. No matter how badly he wants a house, he simply can't afford it, and unless he is a congenital chump, he won't undertake it.

Labor Costs at the Fair

Do labor costs of $100.00 to $150.00 a week for common builders seem impossible? Not at all. They are often made to go higher than that. Consider the plight of the exhibitors at the New York World's Fair who were forced to pay plain, common, ordinary electricians, carpenters, mechanics, etc., as high as $300.00 a week. This of course seems fantastic, but there are apparently unanswerable proofs that $200.00 a week for a common workman was what the Building Trades Council of New York seemed to think was about right for exhibitors. The New York World's Fair has lost money, and there have been numerous public exposes of the unquestionable racketeering practiced by contractors and labor unions in putting up the Fair buildings so as to shake down the unhappy exhibitors for the maximum possible amounts. It is estimated that the foreign exhibitors alone were gypped out of about five million dollars in putting up their buildings. A South American exhibitor claims to have sent an electric sign made in South America at a cost of $800.00, and it cost him over $8000.00 just to have it installed. He estimated that he could have had it installed in his own country for $800.00 or less. Another exhibitor who had some complicated equipment of highly specialized design which had to be set up by his own artisans had to hire five or six New York racketeers at $200.00 a week to do absolutely nothing but sit by and watch the work done, so as to make it "legal" and in accordance with the Fair's contract with the New York labor unions.

Other World's Fair exhibitors have plaintively come forward with literally thousands of cases of the squeeze having been applied; stories of workmen deliberately stalling and killing time until the last minute and then demanding fabulous pay to get the work finished. One European exhibitor claims that the workmen deliberately loafed on the job until a day or two before the exhibit was supposed to open and then demanded a bonus of about $35,000.00 to go to work and get it done. This exhibitor indignantly refused to be shaken down, and when the Fair opened, the building was without electricity. They secured a small portable generator and provided their own current, but the first night after using this outfit enough parts were stolen from the engine so that it could not be operated the next day. Another exhibitor had to hire guards to keep the goon squads from smashing up his restaurant equipment, slashing upholstery, and otherwise destroying property because he had manned his restaurant with skilled foreign waiters to the exclusion of New York waiters who were determined to get the jobs. And so the story goes, on and on and on, for pages and pages of magazine and newspaper articles, with account after account of just plain banditry.

Why bring this up and discuss what went on at the World's Fair? Simply because it is exactly what has been going on in the building industry in every large city for a good many years. Try to build anything around a large American city and the same thing happens. Building is simply out of the reach of the people who need the buildings. Large industrialists in need of factories can possibly stand the shake-down, but the big volume of building that furnishes homes and apartments, that modernizes stores, that improves the living conditions of the American people, simply cannot be conducted on such a basis. People can't live in apartments or houses that rent beyond their means, and people that want to buy houses feel that they can't afford to do it at the present costs.

No one who isn't personally acquainted with people who have been gouged and victimized by the rapacity of these racketeers can appreciate the extent of the depredation; the utter ruthlessness with which racketized labor organizations are operated for the benefit of the controlling rackets, so that the workmen, as well as the public, are the victims.

The Effect on Textiles

And what has this got to do with textile mills? Plenty! What, outside of a war, could stimulate a drooping textile industry like a big building boom? The furnishing of five million homes with all of the window shades, draperies, upholstery fabrics, bed linen, towels, bath mats, carpets, table cloths, napkins, and miscellaneous goods required to furnish a new place ought to pep the entire textile industry up about 15 to 20 per cent for the three or four years that it would take to get this building accomplished. An increase of 15 per cent in textile demand over a steady period of several years would do more to stabilize prices and yield a little profit than all the regulations Congress could think up in six months.

In the second place, the building industry may be considered as a horrible example. It was not always racketized, and neither were various other industries now under the control of hoodlums. There was a time not so long ago when these businesses were as free from rackets as the southern textile industry. So far, southern textile manufacturers have pretty well stood off these fellows, but they are a persistent crowd. Their profits are enormous, and there is always a lush and fallow field in any industry which has not been brought under their sway. The

(Continued on page 84.)

SURFACE ACTIVE AGENTS

Their Applications in the Wet-Processing of Textiles

By Andrew J. Kelly
Burkart-Schier Chemical Co.

Part I

"SURFACE TENSION"—it is difficult today to find an article dealing with the wet-processing of textiles which does not include these magic words or their equivalent. It is as popular a topic as "pH" was just a few years back, and it has, like pH, taken an important place in the dictionary and vocabularly of the textile chemist and colorist. In fact, it has even boiled over into the field of the newsstand magazines. In a recent issue of a very popular picture weekly the reader was told, with pictures, that "shedding water like a duck's back" was no longer such an impressive simile; that in fact the poor duck couldn't even float if a little bit of a wetting agent was added to the water.

Thus was the public introduced to the surface active agents which have been tools of the trade of the textile mill man for years. It was an impressive piece of publicity work, of interest to every manufacturer and user of these agents. But in spite of the presence of the phrase in the textile vocabulary there should be no harm in here introducing a simple dictionary definition. Surface tension, according to Van Nostrand[1], is "that feature of a fluid surface which causes it to exhibit the properties of a stretched membrane."

The classic demonstration is the floating of a needle in water. Nearly everyone has tried this at one time or another and found it to be easily done with a little patience. The liquid seems to be possessed of a skin which supports the needle although steel is almost 8 times as heavy as water. This simple demonstration is deserving of the term "classic" for it admirably illustrates the repelling force which must be overcome to obtain intimate and complete wetting of any substance in an aqueous medium or solution. Other factors are of course present but nevertheless it is something close akin to this which makes it difficult to wet out yarns and fabrics. The nature of water is to always draw up into the shapes having the smallest possible surface area —this same force gives a spherical form to a drop of water and causes water to rise in a very fine (capillary) tube. This latter phenomenon, known as capillarity, is closely allied to surface tension and is in fact a measure of the surface tension of a liquid.

The relative wetting properties of various solutions may be compared by measuring the relative heights to which they rise in identical capillary tubes. More than likely something of this nature will be devised (if it has not already been) for evaluating the efficiency of different wetting agents. The more tendency a liquid has to wet the wall of a capillary tube the less it will tend to rise or to maintain a forced rise in the tube.

In the wet-processing of textiles, wetting is of necessity closely allied to detergency. A detergent, to put it briefly, is "something that cleanses". In most cases some detergency occurs simultaneously with wetting, willy-nilly and beyond the control of the operator. Dirt, we have been told, is merely matter out of place, and some of this matter is going to be displaced when fibers or fabrics are wet out. Most wetting agents consequently are detergents as well, to a greater or less degree—this fact will be discussed more fully later. Yet there are times when pure wetting alone, with as little scouring or cleansing as possible, is desirable; for operations such as this an agent would be wanted which is as nearly as possible a purely surface active agent.

In these preliminary remarks it will no doubt be noted that the definitions which are given might more aptly be called descriptions. Indeed such is true—they represent an attempt to describe rather than to explain certain natural phenomena. The technical explanations found in textbooks of physics and physical chemistry are involved and not always satisfying. Such a condition is not unreasonable. J. W. Dunne[2] has pointed out, in a neat parallel, how difficult it would be to explain so ordinary a thing as a common color to a person who had never been blessed with sight. For instance, red is simply red, a vibration with a fairly long wavelength in the visible spectrum. But such words would hardly bring a mental picture of a vivid scarlet. In the position of the person never blessed with sight, the writer is accepting surface tension as an observable physical phenomenon and no attempt is made to paint a full color mental picture of its technical background; proceeding instead from the brief and sketchy

(1) Van Nostrand's "Scientific Encyclopedia" (1938), page 1,000.

(2) "An Experiment with Time", by J. W. Dunne (The Macmillan Co.).

outline which has been given.

The January 1939 issue of the *Journal of Industrial and Engineering Chemistry* (published by the American Chemical Society) carries a comprehensive and authoritative symposium on the subject of wetting agents and the reader is referred thereto for a technical discussion of the many phases of the topic. This issue of the *Journal* represents almost an encyclopedia of current knowledge, opinion, and theories in the field. Incidentally, an appended list of surface active agents carries 150 entries, and is by no means complete.

Some form of wetting action is essential to wet-processing; the very phrase "wet-processing" would be a misnomer if the material in process could not be wet. Since surface tension represents a condition which must be overcome to obtain wetting, the term "surface tension depressants" was early applied to such agents as would lessen the resistance to penetrating and spreading shown by aqueous liquids. However, the descriptive title "surface active agents" has come into more general use, largely because in most textile applications we have to deal with interfacial rather than surface tension. But this represents merely an extension of what has been discussed and refers to the fact that yarn, hosiery, fabrics, etc. in process are submerged in the aqueous bath rather than floated on its surface. Hence the tension is interfacial (between textile and liquid) rather than surface (between liquid and air). The resistance to wetting is present in either case.

It will be remembered that the earliest test for the efficiency of wetting agents and penetrants consisted of dropping a swatch or skein on the surface of a solution of the product and measuring the sink time. This was the general practice until the memorable paper presented by Draves and Clarkson in 1930[3] introduced the scheme of *submerging* in the test solution, under definite conditions, a weighed skein of 40s/2 grey cotton yarn. This is now the official method of the American Association of Textile Chemists and Colorists for the evaluation of wetting agents.

Interfacial tension may here be simply considered as the tension between the interfaces represented by the yarn or fabric in the one case and the under-surface of the liquid in the other. Any substance or compound which promotes a more rapid and more thorough wetting of the textile fibers in a wet-processing bath may be justly designated as a surface active or wetting agent. Not only the new synthetic products, but soaps, sulfonated oils, even alkalis alone may serve as wetting agents according to the conditions of use.

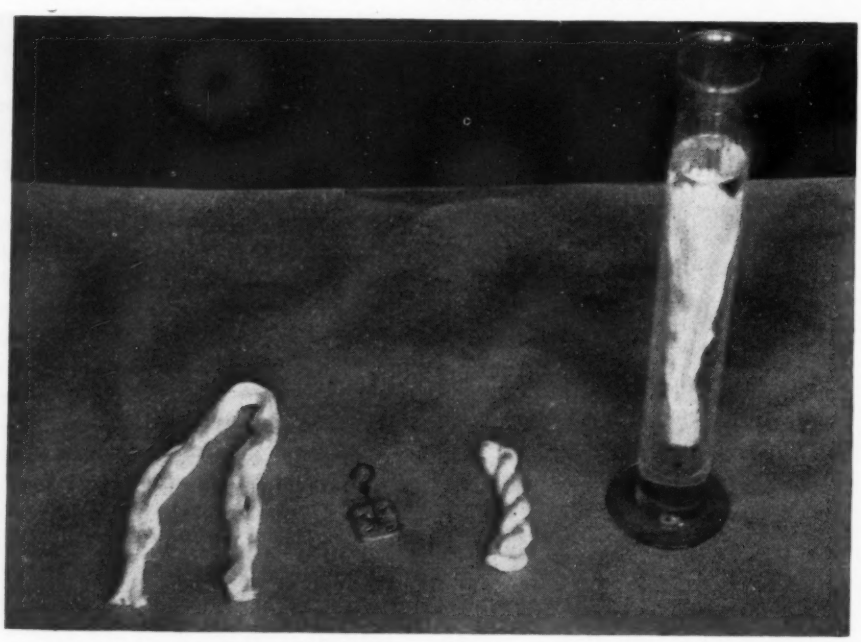
Another procedure for the comparative evaluation of the wetting power of surface active materials is the Canvas Disc Method. "In brief this test consists of measuring the sinking time of a 1 inch diameter No. 6 Mount Vernon canvas disc under definite conditions of temperature, concentration of surface active agent, water hardness and hydrogen ion concentration."[4] The canvas discs are placed in a Gooch funnel having a 1½ inch diameter and a barrel 3 inches long and the funnel is then quickly inverted into 500 cc of the solution for the test contained in a 600 cc beaker. The time required for the disc to begin to sink is measured and is recorded as the "wetting time". The average of four such measurements is recommended for accuracy.

This method has some advantages over the official AATCC procedure. After a supply of the 1-inch discs has been cut (a 1-inch steel die is very convenient for this) the tests may be run with great ease and rapidity. The apparatus is generally available in any laboratory and the No. 6 canvas easy to obtain. Reports of more general use of this method are needed to determine its ultimate value although it has already given good service to many.

For the determination of true surface tension values, a device such as the Cenco-du Nouy tensionmeter (see illustration) is required. This instrument measures the pull of a liquid film on a platinum-iridium ring "wet" by the liquid.

The fundamental application of a surface active agent in the wet processing of textiles is as a wetting agent—to make the process water "wetter" by reducing its inherent resistance to penetrating and spreading. The customary operations of scouring, bleaching, dyeing, and finishing are thereby expedited and rendered more efficient. Note this statement: a pure

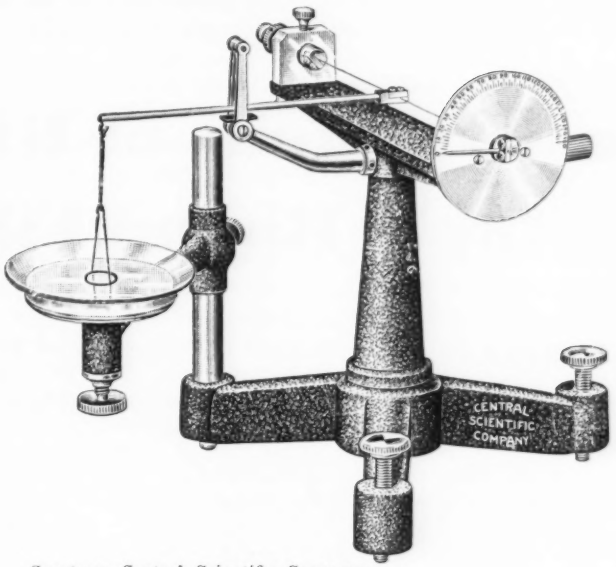
(3) "A New Method for the Evaluation of Wetting Agents", by Dr. Carl Z. Draves and Dr. R. G. Clarkson, American Dyestuff Reporter, March 30, 1931.



Photograph by the author of apparatus for official methods of AATCC for evaluation of wetting agents . . . . . .

(4) "The Canvas Disc Wetting Test", by H. Seyferth and O. M. Morgan, Dyestuffs, September, 1938, published by National Aniline & Chemical Co., Inc.

surface active agent would not of itself be expected to perform any of these basic wet finishing procedures but merely to speed and improve them. In other words, its function is to bring the aqueous solutions of the various baths into intimate contact with the ultimate textile fibers so that these baths may be enabled thereupon to perform thoroughly their prescribed duties. A surface active agent so named and so applied should be expected to do no more.



Courtesy, Central Scientific Company

Cenco-duNouy tensionmeter for determining surface and interfacial tensions by the ring method .

If, then, the fundamental requirement of a surface active agent is "wetting", it follows that any one which will provide adequate wetting and at the same time exhibit other qualities which are desirable possesses a greater value for the processor. Much depends upon the understanding of the term adequate, for what might be adequate wetting in one instance may be grievously lacking in another. Under good conditions, where the process water is soft, the fiber or fabric is not too difficult to penetrate, and the material is held in the bath a reasonable length of time, plain soap of good quality often provides all the penetration and spreading necessary.

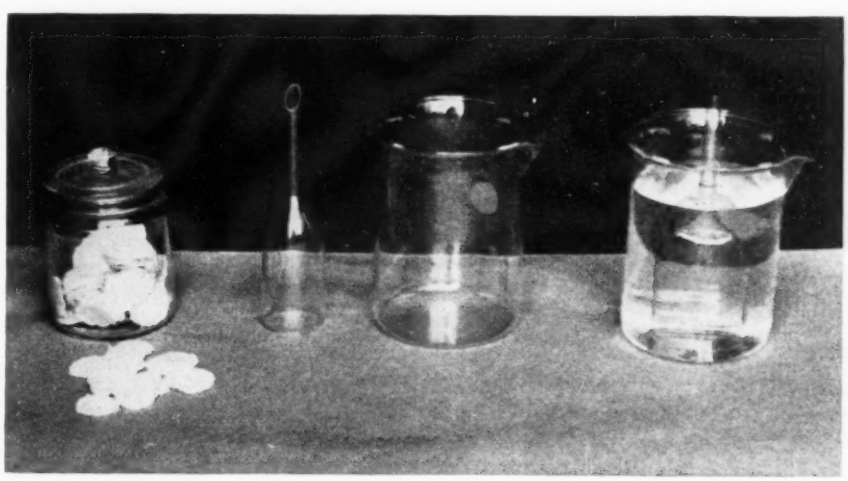
Possibly it comes as a surprise to some to see soap classed as a surface active agent, yet the simple fact of its sudsing is an indication of its activity in this regard. Plain water is much too "tense" to permit of any such spreading as is characteristic of soap solutions and which we observe in the formation of soap bubbles. The wetting properties of soap were being gainfully employed long before surface tension was being actively studied. Everyone is more or less familiar with the improved penetration obtained in a good sudsy soap bath, though it might as well be stressed here that copious sudsing is no infallible criterion of a fast wetter. When a soap solution does provide sufficient wetting action for a particular operation wherein soap is essential anyhow, this can be considered as so much "gravy", for its excellent softening and emulsifying properties are not thereby lessened. The softening effect of soap on textiles is largely due to its fatty nature; and this attribute is enhanced by the availability of anti-oxidants to inhibit the development of undesirable odors and discolorations in stored goods. Wherever detergency is actually undesirable in a processing bath it is unlikely that soap would be considered in the first place.

With soaps may be considered the sulfonated (sulfated) oils, now old in the arts and familiar to all. They, too, are "adequate" wetting agents for many operations. Lacking some of the detergency of soap, these soluble oils possess superior resistance to hard water and to mildly acid baths, and are in addition serviceable dyeing assistants and softeners. As with soap, the wetting action of these sulfated oils is often overlooked because their other features have been stressed—they are seldom sold as surface active agents *per se*. Yet, 0.5 per cent solutions (dry basis) of either soaps or sulfated castor oils of average grade will show a wetting time of well under 25 seconds, using the standard AATCC method in soft water at 25 degrees C. (77 degrees F.). The same holds relatively true for the other common sulfonated (sulfated)[5] oils, such as olive, teaseed, etc.

Among the first—possibly the very first—products actively merchandised as penetrants and wetting agents were the soluble solvent compounds. Usually made up of one or more solvents solubilized or emulsified with a sulfonated oil, they possessed the property of depressing surface or interfacial tension to what was then

(Continued on page 57.)

(5) For a discussion of the nomenclature of the terms "sulfated" and "sulfonated", see report of the Sub-Committee on Methods of Analysis of Sulfonated Oils, 1932 Yearbook of the American Association of Textile Chemists and Colorists, page 139.



Apparatus for canvas disc method of evaluating wetting agents; photograph by the author . . . . . .

Practical Methods of Running Cut Staple Rayon Fiber

Article 3

• This concludes a comprehensive series on practical methods of running cut staple rayon fiber. The first article, on page 63 of the August issue, described the various types of cut staple fiber and their characteristics. The second installment, page 52, September issue, covered the actual handling of the fiber on mill machinery, up to and including the fly frames.

The present installment continues this discussion of practical mill methods, covering the spinning, warp preparation, and weaving of cut staple rayon yarns and cloth. The author has had an intimate practical experience in this field for several years . . . . . .

PERHAPS one of the first questions that comes to the mind of the average mill man, in starting to run spun rayon or cut staple fiber, is what spindle speed should be run on the spinning frames. On old type spinning frames, with rings, etc., adapted to fine combed numbers, a spindle speed of 7,200 r.p.m. is regarded as fast enough by most spinners; of course modern spinning frames are built for speeds that would prove amply safe on rayon up to 10,000 r.p.m.

To get a strong weaving yarn, a long staple is run on rayon; however, this long staple proves a problem for the spinner in view of the fact that he is running double roving and occasionally a single strand of roving will run for several minutes before it is caught.

On first thought it would appear that a traveler sufficiently heavy could be used to break down any singling that might come through; however, should the weight of the traveler be increased to such a point the yarn would be chafed and ends would be broken down where no singlings were running, the sides per spinner would have to be decreased, and the production lowered.

The proper procedure is to get a traveler with as large a circle as possible to eliminate any damage to the yarn, see that the creels and trumpets are in good order, inspect the rolls carefully, plumb the spindles, see that the guides are properly set, have the spinner pull off the yarn on the bobbin made from single roving before creeling and putting up the end, and have a special tint mark for the yarn made by each spinner. One good way to get good results is to have the spinner make a small chalk mark on the clearer board directly over the spindle every time an end is put up; in the majority of cases it will be found that certain spindles are causing the most of the ends down. When several marks are made by the spinner for the same spindle, the roving should be broken back and the spindle flagged for the fixer or section man.

Opinion varies in regard to the type of traveler best suited for rayon. Some spinners state that the square point is the best; others have great claims for the round point—just as on cotton. It has been my observation that a spinner makes a success of either type, provided he likes or is partial to the traveler to begin with. However, there are good points to both types, and we could bring two old-timers together for a windy discussion of the merits of each type that would probably wind up exactly like it started.

As previously stated, twists for spun rayon yarns must be determined by trial and error, with the type of fabric to be made taken into consideration.

A good estimate of efficiency for carding and spinning for ordinary cut rayon is about 10 per cent lower than cotton, with a labor load of about 75 per cent of that used for cotton.

Warping and Slashing

A common failing or oversight in the average cotton mill is careless warping and slashing. If a section beam on rayon or cotton warp yarns is not run properly, bad slashing, and consequently inefficient weaving, will result. Before warping rayon yarns, every section beam in the plant should be sent to the machine shop and put in a giant lathe, and the journals straightened and tested, and the heads tested for wobbles and smoothed up and shellacked or enameled; also, every beam should measure identically the same distance between heads. There is nothing more likely to cause seconds or be more provoking than a slashed warp—on either cotton or spun rayon—with a tangled or damaged selvage. It is utterly impossible to run a satisfactory warp if the section beams are not in perfect order. The same thing is true in regard to loom beams. If a loom beam has crooked journals or wobbly heads, there is bound to be a condition of high and low selvages on the warp which will cause excessive end breakage, wavy cloth, and numerous other troubles.

In case a high speed warper, with cone creel, is used, the cone winder should be checked thoroughly for the shape or build of cones. If no slub catchers are ordinarily used, they should be secured, as the market quality requirement on spun rayon fabrics is a great deal higher than for average cotton goods. With the cone creel or automatic spooler cheese, the tensions should be checked to see that they are uniform and also the alignment of the cone or other package should be ex-

actly on center with the guides or tensions. On the old style warper operating from tubes or spools, the wooden skewers should be taken out, soaked in linseed oil, and tested individually to see that they are not crooked. Under no circumstances should two types or sizes of spools be used that will cause a different tension on the ends from the creel. In the majority of cases, streaks in finished goods can be traced back to uneven tension at the warper.

When a set is laid out for the warper, the number of ends per section beam should be held to 500 or lower. By following this procedure, more lease rods will be used at the slasher, the ends will have more space between them, thereby lowering the chances for stuck ends or ends out of lease. There should always be an even number of section beams in the slasher set so that a balanced lease may be run. The first or large lease rod on the slasher should always divide the tension equally between the top and bottom parts of the lease. An ideal lease method is to divide the set into halves, quarters, eighths, etc. The number of ends in the style, the warper and slasher comb capacity, sometimes prevents such a procedure; however, wherever it is possible to do so, very noticeable results will be obtained. Another important requirement is to lay the ends in the slasher comb the same number per dent as there are section beams in the set; the idea is to have every end coming from the same section beam going to a separate dent in the slasher comb at the front. This will eliminate stuck ends and keep the ends from rolling over each other as they pass through the delivery rolls and on to the loom beam. Increasing the number of ends excessively for the sake of cutting down the number of beams run at the warper—on fine cotton yarns and spun rayon—is a poor place to try to save money.

Careful attention should be given to the matter of tension on the yarn when slashing spun rayon. When the slasher is empty, both the large and small cylinders (if it is a standard cotton slasher) should be inspected to see that there is no binding at the bearings and that the cylinders can be turned very easily by hand. This is a very necessary precaution if the cylinders are not positive drive. Sometimes a section beam creel is not lined up properly with the slasher and will cause all of the set or some particular section beam to have less tension on one side than on the other. In such a case the frame tender is likely to build up the delivery roll enough to make the slack yarn stay in lease, and of course more tension is added to the already tight side with the result that this part of the warp yarn is damaged by stretching.

Maintaining the correct temperature is very important when slashing cut staple rayon yarns. A temperature of 180 degrees F. should be the maximum at the size box and at the cylinders. A great many people use the same size mixture on viscose rayons as is used on cotton yarns, the starch content being reduced by about 30 per cent, and the compound (tallow and gum) increased slightly. Cotton size has to reach the boiling point to be prepared properly and extreme care should be taken to see that the size is pumped from the cooking kettle to the storage kettle, and the temperature reduced before it is fed into the size box. In the case of acetate staple, a plain glue or gelatine compound with a soluble oil is used, as acetate fiber has a tendency to repel or resist ordinary rayon or cotton size. This is true also in regard to a spun rayon mixture with a high wool content; the acetate size could be used for the wool mixture.

Weaving Cut Staple Rayon

Any experienced mill man will agree that the three major requisites for successful weaving on any type of fabric are: a good, strong, even yarn, good slashing, and good loom fixing. "Slouchy" loom fixing has put cotton mills on the rocks as much as any other like cause. Before starting up any looms on spun rayon fabrics, they should be thoroughly overhauled and put in first-class condition.

Loom lining is a very simple thing, yet there are many looms operating today that are not really and truly lined. The main cause of this trouble is due to the fact that relatively few loom fixers have been instructed properly along this line. A good way to check a loom fixer is to look at his monthly shuttle bill. If his shuttle consumption is high, it is a pretty good sign that Mr. Overseer has never really checked the man's section or work and given him the proper instruction. In a majority of southern cotton mills, an expert loom liner could be put on the payroll and more than pay his wages in lower shuttle consumption, higher production, less seconds, and even better first quality goods. Nearly all experienced superintendents know this to be true; but they have certain budgets to live up to that plainly state that: "Thou shalt not depart from the figures hereon, for to do so will be considered a felony."

It has been our observation that the best way for a mill that has been running on plain cotton goods or semi-fancies to weave spun rayon satisfactorily is to "give the budget a swift kick in the pants" in order to get all of the looms in first class condition, pick the help carefully, giving them patient and full instructions, build up a good solid organization, and institute a system of checking that will guarantee the job will be kept up day by day. Then the money invested at the start will not have been spent in vain.

Too many selling agents have given mills the idea that about all there is to running spun rayon is well covered by cotton fabric requirements. Scarcely a week passes that we do not hear of some mill that has had cloth rejected due to off quality. The majority of the cases were due to weaving imperfections which in reality means "punk" loom fixing. Before a mill accepts an order on rayon goods the selling house should secure a double cut sample for all parties at the mill to inspect carefully so they may know what they are up against before any goods are woven. The time to correct defects on spun rayon fabrics is before the fabrics are woven. Should the mill get off to a bad start the standard of grading in the cloth room should not be lowered; the goods should be classed as seconds and accepted as a danger signal for all concerned to get busy and produce results.

A good thing for a superintendent to remember in handling spun rayon defects, especially when he

(Continued on page 57.)

Ladies' Styles of 1954

THE editors got quite a kick out of reading this article—not that they necessarily agree with everything the author says. But it is interestingly written, portrays the artists' conception of what may come in women's wear during the coming decade or so, and besides, the pictures are easy on the eyes. While reading the manuscript, the editors smiled (and they think you will too), but many would have laughed outright during the mauve decade if someone had suggested that women would wear lamp shades for hats, and men would some day clothe their feet in socks that stay up under their own power. Incidentally, the brackets are ours . . . . . .

IT MAY be difficult to believe that such a flattering and prestige article as silk hosiery ever will become as obsolete as camisoles, voluminous petticoats and other essentials of grandmother's wardrobe.

It may sound equally incredible that leather, commonly used for garments in pioneer days, will return in the form of an ultra-fashionable fabric for town wear and spectator sports. [Manufacturers of textile belting take note.]

But these and other oddities are distinct possibilities in women's apparel of the not far distant future, according to top flight American designers. They are among the interesting ideas in fabrics and fabric substitutes which make their appearance in a futurama of feminine fashions to be used in the fall merchandising program of the Spring-Air Co., to dramatize the 15-year construction guarantee on Spring-Air mattresses by projecting the guarantee period into the realm of women's fashions.

The forecasts, incidentally, were acquired from such eminent artists as Merry Hill, creator of the famous, finger-free, three-dimensional gloves; Egmont Arens, internationally prominent modernist; Tod Draz, eminent young New York designer; Brigance of Lord & Taylor; Dorothy Couteaur, former Molynaux assistant; Gladys Parker and others. And surprisingly enough their views on what the smart woman of 1954 will be wearing are not fantastic or bizarre but amazingly practical and functional. [This depends on what you are selling.]

New fabrics are introduced, not for the sake of novelty and innovation, but only when they serve a definite need for combining greater comfort, convenience and smartness.

Gleaming aluminum cloth, for instance, is chosen by Gladys Parker, successful young fashion designer and newspaper cartoonist, as the fabric for evening wear cause it "may be the answer to many a 1954 maiden's prayer, when both budget and career-girl smartness must be considered in dressing for evenings out. And she serves fair warning on the dry cleaners that "this 'cloth' does not tarnish and it may be shined and cleaned with ordinary scouring powder."

Flexible glass dress which gives utmost freedom of movement—Tod Draz

Arens suggests a substitute for silk hosiery to relieve women of the problem of "runs". The woman of tomorrow, he predicts, will have no problem with runs for her legs will be sprayed with a synthetic silk which will wash off when desired with skin toning solvents. [Maybe "Cotton's" knitting section editor had better adopt a trade that will not be obsolete.]

The evening costume conceived by Arens for the smart woman of 1954 is based upon a new principle of construction—the Semi-Eliptical Spring Torso Clutch—which holds the brassiere firmly in place by gentle pressure on the chest and back. It is made of a transparent plastic material of great elasticity and strength. The skirt of the glamorous gown is of shimmering sheer, "slightly translucent at the waist and rapidly graduating to complete transparency."

A woven leather cloth is suggested by Miss Hull for a tailored suit for the smartly dressed woman of 1954. She describes it as "fascinating waterproof fabric with a marvelous tweed-like texture and the color of distant mountain mist over autumn foliage."

Miss Hull with characteristic ingenuity makes the "square shouldered bolero independent of the flared skirt slip dress so that no matter how violently she waves at the air taxi she will not disturb her hemline."

The interesting hat is equally functional. It "has a tightly rolled edge around it which can be

unfurled in case of rain, to fall all around her to the elbows like a veil to protect her hair and face." [At last a practical hat!]

Miss Hull also envisions "a glorious new silky tissue" for "one piece undies which can be mentholated for a fresh feeling or just thrown away after one wearing." [Use Vicks after each wearing.]

Draz creates exotic effects in evening wear for the fashionable woman of 1954 with dramatically flowing drapes over perfectly-tailored, seamless tights.

From different sources comes the prophecy that corseting will be virtually obsolete in the 1954 era.

"The woman of 1954," Arens predicts, "will be a person of leisure because machines will do her work. She will have a beautiful and healthy body because science will have taught her how to develop it with diet and endocrine control. She will spend carefree hours lying in the sun until her skin is golden brown. She will have perfumed skin dyes to enhance or soften the skin colorings. She will be averse to nudity but skillful in approaching it." [Practice makes perfect.]

Egmont Arens created this evening dress for the smart woman of 1954.

"Bodies in 1954," says Brigance of Lord & Taylor, "will be lithe and healthy and trained into shape by care as expert as a professional mannequin's and heavy corseting will be needless."

The action costume which he devises for the woman of 1954 is of silk lastex which "lies coolly and pleasantly against the skin." The bodice is a snug fitting vest and elastic tights are worn under the full action skirt.

Dorothy Cox, designer of spectator sport frocks, creates a two piece suit of "smooth covert cloth matching the finish of her car or autogiro" for the active woman's costume of 1954 The hat is a streamlined helmet of matching covert cloth. [Textiles not entirely omitted.]

Whether these predictions of America's foremost fashion designers find substantiation in styles of the future, there can be little doubt that changing conditions and new trends in living will create a demand for new fabrics and fabric substitutes. [And warmer weather.]

Running Cut Staple Rayon

(Continued from page 55.)

is tempted to bring pressure to bear on the cloth room to ship off standard goods as first quality, is that the defects that are present in a piece of gray goods are magnified tenfold after the goods are finished. After all, if a mill is to stay in the game, it is good practice to keep all of its troubles at home and not advertise them all over the New York market.

When a mill starts weaving spun rayon fabrics, a small laboratory should be improvised to finish and dye swatches from all looms starting up on new styles. This is especially important where mixtures of various types are run. It is very difficult to see all of the possible defects on spun rayon fabrics with the goods in the gray state. Often there are such defects as misdraws, warp streaks, mixed yarns, and in rare cases we might find that the raw stock was put through wrong or else there is a small difference in the luster of the rayon compared to previous goods on the same style, not visible before dyeing.

Surface Active Agents — Their Applications in Wet-Processing Textiles

(Continued from page 53.)

a remarkable degree. A simple soluble pine oil composed of sulfonated castor oil and steam distilled pine oil can be made to show a sink time of approximately 25 seconds in a 0.3 per cent solution (dry basis). And even speedier wetting can be had with some of the skillfully compounded more complex soluble solvent compounds.

When these products were first offered and widely accepted, their number rapidly increased and soon a quite bewildering complexity of solvents were to be found incorporated therein. Their general market became about as turbulent and confusing as is that of the so-called "synthetic" products of today. But the solvent-soluble oil compounds have now settled down to a fairly stable basis, with a comparatively small number of rather well-defined types being offered. Sulfonated oils or low titer soaps are the principal bases, with pine oil, tetralin, trichlorethylene, ethylene dichloride, certain alcohols, and cresols as the more common solvents. Though marketed as penetrants or wetting agents most of these compounds are almost equally effective as scouring aids or detergents and have desirable dye-leveling and softening or finishing properties. They have fairly well passed through the involved formative stage in which are now found the "synthetics", which will be discussed at the beginning of the next article.

(In the next installment of this article, to appear in an early issue, Mr. Kelly continues his descriptions of the different types of surface active agents with a detailed discussion of the "synthetic surface active agents" referred to above. He then discusses the evaluation of wet processing agents, the textile applications of wetting agents and the desirability of combination wetting and detergent materials, the need for simpler tests for detergency, the importance of feel or "hand" in textiles, wetting out for Sanforizing, the new cationic active finishing agents, etc.—The Editors.)

Fundamental Trends in Consumption of Fibers

By Stephen J. Kennedy

MY FAITH in the future of the synthetic fibers is not so great as to lead me to expect that the mountains of ingrained consumer habit and limited consumer income will be moved easily. Despite the growing importance of the synthetic fibers, which are increasingly taking a position of dominant style leadership in the apparel fields, we should not dismiss lightly the fact that the cotton finishing industry keeps on each year, including 1938 and 1939 to date, grinding out for the women's wear markets its 500,000,000 yards or so of printed percales and another quarter billion yards of sundry printed wash goods, to say nothing of an additional half billion yards of plain dyed and bleached goods.

True, rayon fabrics up to about 850,000,000 yards are being produced for this same market, but the rate of increase has fallen off. Furthermore, part of the increase in spun rayons for women's wear has been at the expense of filament rayons.

It is difficult to determine clearly what has happened in the way of fiber substitution in the principal markets for rayon during recent months because of the extraordinary demonstration of elasticity of consumer demand which we have been witnessing. Low prices for cotton, wool, and rayon fabrics have apparently stimulated actual increase in consumer use.

Despite marked weakness in several important industrial outlets for cotton fabrics this spring, cotton consumption showed a decline of only 13.2 per cent from the peak in 1937 when enormous inventories were being built up, something which definitely did not happen this year, and was almost 1,000,000 bales or 24 per cent higher than for the same period in 1938. A considerable part of the support for this high rate of cotton consumption definitely came from the apparel markets, even those in direct competition with rayon, which in the aggregate showed no diminution in size. Similarly wool consumption declined by only 4.2 per cent from the 1937 peak level. Filament rayon consumption in broad woven goods, on the other hand, increased by only 5.4 per cent compared with 1937, from 162,500,000 pounds to 171,300,000 pounds, while rayon staple jumped from 18,000,000 pounds to 59,000,000 pounds.

Thus it seems clear that increased consumer takings of textiles, resulting from a greater elasticity of demand than we have previously experienced, has led to outright increase in consumption. What fiber substitution has occurred has been in the slightly larger share of the total going to rayon more than to displacement of other fibers.

The "Center Core" of Every Textile Fiber Market

In the development of a new product for an existing market, account must be taken of one of the fundamental characteristics of markets. I can best explain it in terms of a military analogy. In the defense of a position, such as the German Westwall, the defense works are organized on the ground like an uncoiled spring. The opposing force at first crushes the outlying defenses, pushing back the outguards upon their supporting positions and finally upon the heavily fortified rear areas. As the spring is pressed back the resistance grows stronger until the forward drive is stopped in its tracks; its momentum completely gone.

So with our markets. Their outer edges yield easily to attack by new fibers, fabrics or style ideas, but as the newcomer goes deeper into the entrenched positions of the existing fibers, or what have you, the rate of progress slows down. Fundamental changes in conditions may permit further progress but eventually the slowing down occurs until some further change takes place.

In short, every market has at its center a core of staple business, varying, of course, in proportion from one market to another, which is highly resistant to change. Year after year style cycles, price cycles, and cycles in consumer income pass over it without greatly affecting it, and even long term trends change it but slowly. Beyond this center lies a less permanent market which is continually expanding and contracting in size according to shifts in consumer requirements; and finally on the outer fringes, there is the "play-boy" part of the market, that like the dry, dead leaves on an autumn afternoon responds noisily to every shift in direction of the changeable breeze.

But, for most markets, this stable central core, representing the inherent conservatism of the ever-increasing percentage of people of middle age in our population—those who control the purse strings—is much larger in proportion to the total than is commonly supposed. We have all seen demonstrations of this several times in the past with filament rayon, and we are apparently witnessing one now in rayon staple in the women's apparel market.

As compared with the repeated annual doubling of consumption of this fiber for two or three years back, during the first eight months of this year consumption held at almost a constant level. In part, this has been due to actual fiber shortage, but taking into consideration the new markets in men's wear and elsewhere that are being opened up to it, some significance is to be attached to the fact that the upward trend in the rate of rayon staple consumption has at least considerably slowed down. The current high price of raw wool will apparently introduce a fundamental change of the kind I have just mentioned, opening up a new avenue of penetration to the market, and breaking the impasse which otherwise seemed about to develop.

An abstract of a paper on "New Opportunities for Fabric Development in Men's Wear", by Dr. Kennedy, who is director of market research of Pacific Mills, New York City; read before the American Association of Textile Technologists in October.

The Application of Naphthol Dyes to Cotton and Other Textiles

By Joseph Lindsay, Jr.

Part I of Two Parts

THIS article on naphthol colors comes logically as a supplement to the series by E. W. Pierce, concluded in the September issue, which covered, in eight articles, the basic, direct, acid, sulphur and vat dyes.

Mr. Lindsay's discussion on naphthols, herewith, is based on his teaching material at Clemson College, where he is a member of the textile school faculty, and upon information on the subject utilized in lectures on naphthols delivered by him at the school of Ciba Company, Inc., in New York City during last summer . . . . . .

THE term naphthol, as used commercially today, refers to those insoluble, colored combinations which are produced on the fiber by the precipitation of a naphthol body with a suitable amine. This class of colors is also known under such older terms as ice colors, azoics, and insoluble azos, depending to a large extent upon the age of the person using the term. There is a reason, of course, for the use of each of these terms. Ice is often necessary in their application; the method of forming the dye is very similar to that used in the manufacture of such older, common azo dyes as some of the acid and basic colors; and naphthols are used as one of the important components of the color when formed.

From a chronological point of view the naphthols, as dyes produced on the fiber, had their beginning in 1880 when English brothers, Robert and Thomas Holliday, patented a method for combining beta naphthol and beta naphthylamine to form a bluish red on cotton. This was only four years after the discovery by Griess of the all important diazo reaction, from which the modern dyestuff industry grew with tremendous rapidity.

A few other naphthol combinations similar to Holliday's red, and all based on alpha and beta naphthols, the principal one being beta naphthol plus para nitro aniline, were used in a comparatively small degree up until just before the World War. Greisheim, a German concern, about this time brought out a product known as Naphthol AS which gave better dyeings in several respects than beta naphthol. The war hindered the development of this line of products so that it was not until 1925 and later that their use in this country became of any importance. From Naphthol AS this group has grown into some 20 or more products which may be used for a variety of shades. This group has to be given serious consideration whenever fabrics requiring fast colors are manufactured.

There are four important steps in the general procedure for dyeing naphthols. These are: impregnation (naphtholation), intermediate treatment, development, and after treatment.

Naphtholating the Material

Impregnating the material consists of saturating it on some type of dyeing equipment with a solution of the necessary naphthol. Since these products are not soluble in water, it is necessary that they be brought into solution with caustic soda to form the naphtholate as shown in Fig. 1.

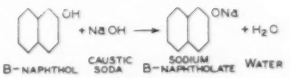


FIG. 1

There are two methods used for dissolving the naphthols which are known simply as the hot and the cold methods. In the hot method the dry naphthol is carefully pasted with a soluble oil, and then a caustic soda solution is poured in together with sufficient hot water for dissolving. This mixture is heated, to the boil if necessary, until a clear solution is formed. The cold method is more in use because of its excellent results in a shorter time. Here alcohol, or numerous other more expensive dispersing agents, is used for pasting the naphthol, and the caustic, dissolved in a small quantity of water, is poured in slowly to prevent loss of alcohol. Solution in practically all cases is immediately obtained without heating. The solution obtained by either method should be quantitative, but if proper care is not taken in pasting, breaking up small lumps of naphthol, and in diluting, an unsatisfactory, cloudy solution may result. The concentrated solution first obtained should be diluted, at the temperature of the impregnating bath, with water containing caustic and in some cases a good dispersing and wetting out agent. The amount of caustic necessary for dissolving is approximately equal to the quantity of naphthol but varies slightly according to the particular naphthol. One-fourth to one-half this caustic is used for dissolving while the remainder is added to the diluting bath. The water used should, of course, be soft to prevent precipitation. Almost any type of alcohol may be used in this pasting, the cost being the deciding factor as in most large scale operations. Denatured alcohols containing pyridine should be

avoided because these brands cause weaker yields with the naphthols.

The actual naphtholation of the goods after solution is obtained is no more complicated than and is very similar to the dyeing of cotton with direct colors. The procedure may take place in any type of dyeing equipment and on cotton in any of its various stages of manufacture. In the case of raw stock, yarn in skeins, warp or wound forms, and piece goods on the jig; the goods are treated in the ordinary equipment for a period of 20 to 60 minutes with an addition of common salt very much as for direct colors. The temperature may be from room temperature to the boil under varying conditions of application. Practically all the naphthols give their highest yield on the fiber at ordinary temperatures, but in practice the bath is usually heated 110 to 120 degrees F. for reasons of improving penetration and circulation in the machines. Piece goods on the padder or continuous system are only given a short dip followed by a squeeze, and, of course, in the concentrated solutions necessary on such machines, the addition of salt should best be omitted.

After the naphtholation process is completed the goods show practically no color being pale yellow, pink, or altogether colorless depending on the naphthol used. In this stage they are very sensitive to such common agents as heat, light, acid fumes, and water-spotting from dripping pipes or wet hands, as well as too long exposure to the atmosphere. Acid and chlorine, which forms acid in water, as well as the carbon dioxide of the air, decompose the naphtholate by precipitating the insoluble naphthol which will not develop later, thereby causing spots or weak dyeings.

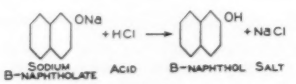


FIG. 2

The safest plan is therefore to develop the goods as quickly as possible in the amine so as to avoid possible defects from the above causes. However, if development must be delayed, piece goods should be dried, and yarn thoroughly extracted and protected by less expensive goods which have been saturated in the naphthol solution.

Intermediate Treatments

Regardless of the method of naphtholation, it is practically always necessary to give the material an intermediate treatment of some nature before satisfactory results can be obtained in developing. The purpose of such treatment is to remove that portion of the naphthol solution which is only held mechanically in and on the goods, and which will develop (precipitate) as unfixed pigment so loosely held by the fiber that it will bleed, dust, and rub off even after soaping and drying. The type of this intermediate treatment varies with the material and equipment in question. In the case of piece goods a careful drying is the most satisfactory, although only a salt rinse or a heavy squeeze may suffice with some shades dyed with the very substantive naphthols. Raw stock may have to be unloaded from the machine, extracted, dried, and reloaded into the machine for developing, although some shades give very good results after only rinsing with salt. In the treatment of yarn, particularly wound on packages, etc., this salt rinse method is used in practically all cases. It saves time by eliminating the unloading and reloading of the yarn for extraction when ordinary package machines are used. This salt rinse procedure is simply treating naphtholated material, after draining, with a cold solution containing 15 to 20 pounds of salt and 1 to 2 pounds of caustic per 100 gallons of dye bath. This rinse is given for 10 to 15 minutes, and may be repeated once or twice, if necessary, to clear off the loosely adhering naphthol.

Developing

After the naphtholated material has been given the necessary intermediate treatment, the goods are ready for the developing bath. This developing process is the actual formation of the color on the fiber, and is the step to which all of the above described preparation has been leading. The naphtholated material is treated with an aromatic amine which has been prepared for use by diazotization and neutralization. The temperature of the developing process should be approximately 80 degrees F., some require lower temperatures, since the diazotized amines are unstable and decompose very rapidly at temperatures above 100 degrees F. The time required is from one to 30 minutes. Again we find an addition of common or Glauber's salt, made before the naphtholated material is entered into the developing bath, to be helpful in preventing the premature loosening of the naphthol from the goods before it has had opportunity to couple with the base. This would result in dyeings which would crock badly.

In the case of piece goods dyed by the continuous process the material may simply receive a short dip in the developer, followed by a squeeze for penetration and a skying passage to insure complete development before rinsing and soaping. If raw stock, yarn as well as piece goods by the jig method, are to be handled, the material remains in contact with the developer for the longer periods, from 20 to 30 minutes.

After-treatment of the Dyed Goods

The next step after the development is rinsing, and this should be carried out cold until the diazo solution is completely removed, then hot water may be used. The soaping off of naphthol dyeings should be carefully and thoroughly attended to in order to remove excess color and develop the final shade of the dyeings. A very common procedure for cotton piece goods and yarn is to boil the material for a considerable length of time, 20 to 40 minutes, with 3 pounds of soap and one-half to one pound of soda ash per 100 gallons of solution. The results are the most satisfactory when this boiling can be accompanied by a mechanical treatment such as is given on a rope soaper for piece goods. The mechanical squeezing materially aids the removal of loosely adhering color pigment from the fiber. In package yarn dyeing, and for raw stock, where the substantive naphthols are the most satisfactory, this boiling after-treatment usually gives best results if it consists of soda ash only. After

soaping the dyed material need only be rinsed thoroughly before drying.

Diazotization of the Bases

One of the most important and interesting steps in the process of developing these colors is the preparation of the base, or developer, for use by diozotization. These developers are aromatic amines which are changed by diazotization into water soluble diazonium salts, and these active diazo salts couple readily with naphthol or phenol bodies to give insoluble colored precipitates. In general, the procedure of diazotization consists in treating an amine with sodium nitrite and hydrochloric acid in a cold solution, 60 degrees F. or under. In the case of para nitro aniline, also sold as Red Base, the action is as shown in Fig. 3.

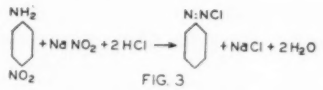


FIG. 3

In the case of benzidine, Corinth Base, it is as shown in Fig. 4.

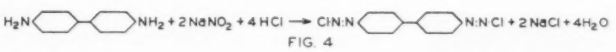


FIG. 4

The diazotization requires from 15 to 30 minutes and the solution should always show an excess of hydrochloric and nitrous acids. The presence of the hydrochloric is easily indicated by testing the solution with Congo Red. Either a solution of this common direct red may be used or test papers prepared by soaking filter paper in the color and then drying. Mineral acids change this bright red into a very dark reddish blue, while organic acids make only a slight change towards a brownish red. Excess nitrous acid is indicated by its action of turning starch potassium iodide paper, or solution, to a dull blackish blue. There are two variations in the order of adding the chemictls to the base to give the best results in the diazotization of different individual compounds. One is the addition of the hydrochloric acid, usually with hot water, to the bases which are soluble in the acid, and then pouring in dissolved nitrite after this acid solution has been cooled, with cold water and ice, to the proper diazotization temperature. The other procedure is for those bases which are not soluble in the acid. The nitrite is added first and the resulting paste slowly mixed with an ice-cooled solution of the hydrochloric acid. The end of the diazotization is easily seen in this case when all the base has been dissolved. The diazonium salts produced by the above reaction may be considered as salts of bases such as phenyldiazonium hydroxide (see Fig. 5), such bases being found

FIG. 5

only in aqueous solutions. They cannot be isolated, because they immediately change into very unstable, highly explosive products.

The diazonium compounds are not entirely in the proper condition for coupling as a result of diazotization. They must be carefully neutralized before use, since the combination with the naphthol takes place very unsatisfactorily in a mineral acid bath. It is necessary therefore to add a compound which will neutralize the excess hydrochloric. Sodium acetate or formate are most used for this purpose since these salts change the bath from the mineral to organic acid side which is very favorable for satisfactory coupling. Here again the Congo Red indicator is useful since the point at which it ceases to turn blue indicates this change from mineral to organic acid. Bicarbonate of soda, soda ash, and zinc oxide are also used for this neutralization with some bases or under special conditions. One point to be noted here is that a diazotized base is more stable on the mineral acid side than after neutralization. If, therefore, the coupling is to be delayed over a comparatively long period, it is best to neutralize only such portions of the solution as are necessary for immediate use. After neutralization the solution of the base is added to the dyeing machine together with sufficient common salt to prevent loosening of the naphthol from the goods with resulting poor fastness to rubbing. It is also generally necessary to add a quantity of alkali-binding agent, such as acetic acid or aluminum sulphate. The former is more desirable since the aluminum salt may form sticky insoluble precipitates on the fabric by combination with oil or soap used in the process. From the above it may be easily seen why sodium acetate or formate are used for neutralization of the base since these compounds form both common salt and organic acid for binding alkali.

From the point of view of the ordinary dye house the foregoing processes, involved in preparing a base, are rather expensive in time and labor as well as somewhat complex for the ordinary operative of a dyeing machine. The manufacturers have therefore placed the majority of these bases on the market in a stabilized form of the diazonium compound. These compounds are sold as the corresponding color salt of the base from which they are derived, and their water solutions are ready for coupling without further treatment in the dye house. They are more expensive of course than the bases, but save the finishing plant time, labor and chemicals.

In considering the bases that are used in conjunction with naphthols, we find in the list aromatic amines of many kinds such as: diamines, naphthylamines, anilines, toluidines, and ansidines as well as other miscellaneous compounds.

There are some forty or more such diazotizable amines which are suitable for practical use and which give a variety of shades when combined with the many naphthols on the market.

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(The second and concluding part of this article on naphthols will appear in an early issue, and will deal with the chemical constitution of the naphthols, fast color salts, the pH of the developing bath, substantivity of naphthols, printing with naphthols,etc.)

(The articles by E. W. Pierce, referred to, appeared under the title, "Modern Methods of Dyeing", and appeared as follows: Article 1, development of color sense, December 1938 issue; Article 2, textile fibers and dyeing equipment, January 1939 issue; Article 3, the basic dyestuffs, February 1939 issue; Article 4, direct colors, March issue; Article 5, acid dyes, April issue; Article 6, treated acid dyes containing metal and chrome mordant dyes, May issue; Article 7, sulphur colors, July issue; and Article 8, vat dyes, September issue.

(Copies of any of these articles, so long as they are available, will be supplied upon request.)

Piedmont STA Covers Records and Reports at Charlotte

THE PIEDMONT Division of the Southern Textile Association held a brief but informative discussion meeting at the Chamber of Commerce building, Charlotte, N. C., Saturday morning, October 7. B. M. Bowen, Salisbury (N. C.) Cotton Mill, chairman of the division, presided; with Marshall Dilling, A. M. Smyre Mfg. Co., Ranlo, leading the discussions.

W. M. McLaurine, secretary, American Cotton Manufacturers Association, Charlotte, addressed the group on personnel problems in the textile plant. The speaker pointed out that the "little" grievances of employees should be given consideration, with the foreman having an open-door policy so that employees might air their grievances. Mr. McLaurine brought out that it is much better for an operative's immediate superior to hear the operative's story, or there may be other ears, not quite so helpful to the plant, that would listen.

According to Mr. McLaurine, grievances are both *real* and *imaginary*, and regardless of the type of grievance, the employee should be heard. At the same time, it was not advised that the employee be argued with, but his problem should be discussed.

Records and Reports

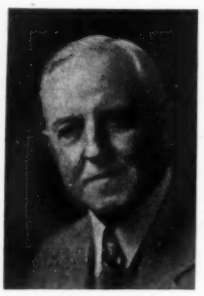
The first question asked for reports or records kept by the mills for co-ordinating departments for production. John A. McFalls, Entwistle Mfg. Co., Rockingham, whose plant is on dyed specialty goods, gave the following procedure as practiced at his plant:

All of the departments of the plant must be kept co-ordinated because of the multiplicity of styles that are produced. When an order is received, the dyer makes an estimate and record of how much stock must be supplied to the card room, and when the card room may receive the stock for processing. In turn, each departmental overseer calculates the time it will require to run the stock through his room, and this is reported to the overseer of the next department so that plans may be made to take care of the processing. Each overseer and the superintendent keep a record of the reports of processing so that at all times the mill can determine just how far along the ordered goods are.

There are, of course, many other reports used in filling an order, such as specifications for warping, spooling, slashing, etc., and it is known at all times just how many machines are being used on a specific order. Furthermore, these reports are under constant observation to preclude errors, and possible jams in the departments.

A system of permanent inventory is kept of stock on hand, so that each department may know what and how much stock is in its own bins. Where different classes of dyes are used, the style numbers are kept separate by classifying them as Green 100s (color and count) for direct-dyed stock, sulfur 200s for sulfur-colors, etc. The employees have been trained to use these designations.

Mr. Bowen



Mr. McLaurine

In this plant, every overseer knows what the other departments are working on, but in order to prevent any possible mistakes, an overseers' meeting is held each morning at which processing problems may be studied.

Waste Reports

The Chadwick-Hoskins plants are not on colored work; Newton G. Hardie, general superintendent of the mills, reported that it is imperative that the numbers be kept right. A daily report is made of weighings in the card room, the weighed stock being sent to the spinning room, which runs the work and reports to the card room. The stock being checked is run on different frames each time so that an average may be secured.

Mr. Hardie is especially interested in waste reports. At his plants a daily report is made showing the amount and type of waste, and each week the overseers and superintendents visit the waste house to see just what waste is being made. Mr. Hardie is of the opinion that no report is worthwhile unless it is accurate, and his reports indicate an *average* condition of the entire mill instead of an isolated occurence.

Mr. McFalls also keeps a report on all waste, including bagging and ties, with each overseer reporting and himself making a conclusive report for the week.

This system on waste is similar to that maintained by Frank D. Lockman, Monarch Mills, Lockhart, S. C. Reports and records are also kept for production purposes and filling of orders, and if it appears that an order is running behind and cannot be filled promptly, a third shift is added for just enough time to fill the order. This is on print cloths.

At the Consolidated Textile Corp. plant, Shelby, N. C., A. W. Benoy reported, the mill is on print cloth work and the production man calculates for each department what stock is required and the time it requires to process it. A copy of the report is passed to each overseer. Also, daily production reports are made, which are consolidated weekly.

The waste reports are made daily and are also consolidated at the end of each week.

Drawing Rolls

The next question brought a discussion of the type of top drawing rolls to give more evenness and better breaking strength. It was pointed out that metallic top rolls for drawing are a thing of the past, with most mills using cork, synthetic or leather covering. Concensus of opinion was that cork and synthetic cots for drawing give an evener sliver and stronger yarn than metallic rolls, and that leather cots are very helpful when fine numbers and combed stock are run.

In answer to a question, R. E. Lindsay, Saco-Lowell Shops, Charlotte, said that most drawing frames being supplied currently are equipped with 1⅛-inch front rolls, with the 1¼-inch rolls being second choice, and with a few frames being furnished with even larger rolls.

At this point, it was also said that the metallic top rolls will give a greater production than other type rolls, but that the yarn resulting is not as even or as strong.

For weighting the top rolls on drawing, it has been found that 2[illegible] pounds on all lines of rolls is proving satisfactory, irrespective of the type cots used or the weight of the sliver being run; or whether the stock is dyed or not this weight gives better evenness and increases the breaking strength slightly.

Some of the plants had been having trouble with the bunch sliding up and stopping the loom or slough-

Reported by John C. Fonville

ing off in the cloth, when running high-speed looms. In several instances this difficulty has been remedied by using a quill that has no taper on the shoulder. The quills have a straight shoulder from the butt to the first ring. The foregoing applies to coarse numbers but not fine.

One mill having this trouble is attempting to remedy it by placing 18 yards of yarn in the bunch.

One man offered the opinion that the sloughing-off could be traced to variation in the numbers and spindle vibration, but there was disagreement on this point.

A further remedy was suggested to the sloughing-off of the bunch: the frames should be started up about half way down the quill, the yarn run quickly down to the butt of the quill and then the bunch formed. This would give a foundation on which to build the bunch.

Mr. Lockman has had experience with sloughing-off and is now preventing it with good loom fixing. He uses the 22-inch check strap instead of the 17½-inch strap, and finds it helpful in stopping the sloughing-off. He also brought out that too much tension on the heel spring would cause the yarn to slough-off. The foregoing does not necessarily apply to quills made with the bunch, but it has been helpful in preventing this trouble generally.

At this point the division was shown the wooden sleeve spindle and the paper tube bobbin, an innovation in the American textile industry. (For a complete story on this equipment, see the article "New Spinning Frames at Dallas Embody Many Modern Features", page 65, September 1939 issue of COTTON.)

Also shown was a new type of clearer board, which embodies the use of brush tufts to keep the roll necks clean. (For a description and illustration of this novel device, see page 104 of the October 1939 issue of COTTON.)

Running Cut Staple Subject of Greensboro STA meeting

Reported by John C. Fonville

DISCUSSION on the processing of spun rayon, centering especially on the blending of this stock in the opener room, featured the fall meeting of the Northern North Carolina-Virginia Division of the Southern Textile Association, held at the White Oak plant clubhouse of the Proximity Manufacturing Company, Greensboro, N. C., Saturday morning, October 14. The meeting was in charge of W. J. Jennings, Minneola Mfg. Co., Gibsonville, N. C., chairman of the division, and J. O. Thomas, Marshall Field & Company, Spray, N. C., who is secretary.

The division was welcomed to Proximity by Herman Cone, president of the organization, who also addressed the group on foremanship. Mr. Cone emphasized the need for foremanship training and explained that at his own mills an expert on the subject is giving regular lectures to the key men in the organization.

Practical discussion was led by T. C. Pegram, Erwin Cotton Mills Co., Mill No. 3, Cooleemee, N. C.

Blending Cut Staple Rayon

The first question asked for methods of blending cut staple rayon, and the chairman called on Leslie L. Cobb, Tennessee Eastman Corporation. Mr. Cobb's remarks pertained primarily to the blending of viscose and acetate rayon. He explained that if the stock is mixed thoroughly many of the problems in running cut staple will be eliminated in the later processes. He described the woolen or "sandwich" mix, which consists of placing layers of viscose and acetate on top of each other in a bin, and then loading the mix in the picker hopper by taking the stock by hand from the bin vertically, instead of using it from the top horizontally. In this way, the same percentage of stock would be maintained throughout the mix.

Humidity in the hopper will assist the stock in running. Some mills also use oil on the stock and to advantage.

Another system for mixing is to arrange the layers of the different fibers to be blended in the sandwich fashion and then blow the contents of the bin into another room, which gives it a thorough mixing; it is then fed into the hopper of the picker. By either of the foregoing systems the waste can be reworked easily and practically.

Mr. Thomas

Mr. Jennings

Should cut staple be mixed with cotton, it is advisable to clean the cotton first, and then mix by the sandwich method.

Some mills also mix by placing the laps on the apron of pickers, and others mix at the drawing, but according to experience, the sandwich method of mixing at the bin and at the picker hopper is the better. The acetate should never be run through the opener room.

A member asked why the sandwich method is considered better as compared with mixing at the picker by putting the proper percentage of laps on the apron, inasmuch as the sandwich method involves the human element of error whereas the lap method seems to be fairly accurate. In answer it was explained that at the picker the blades of the beaters would pull off chunks of the stock, which would be carried through the card, giving a poor blend throughout the plant.

It was brought out that when cotton and viscose are mixed in the 80-20 percentage mix, more rayon is taken out as waste and the percentage is not the same after being processed; this can be compensated for in the mix after determination of the amount of each stock removed in processing.

As regards humidity in the picker room, the plants should not go below 50 per cent relative humidity, with from 50 to 60 per cent desirable. The use of humidity and oil will produce a better lap. Viscose rayon holds 11 per cent moisture and acetate 6.5 per cent moisture at 65 per cent relative humidity. One plant tints its rayon to identify it in later processes.

Setting of Picker Beaters

In a discussion of setting the picker beaters, it was brought out that when running cut staple the picker beaters should be backed off farther than when cotton is processed. Of course, if the mill is running a blend of cotton and rayon, the beaters, especially the Kirschner, will have to be set to give the best all-round results. Mr. Cobb advised against running any of the picker beaters over 600 r.p.m. when processing cut staple rayon, and suggested the use of one carding beater.

The men were interested in the denier best suited for various blends of stock. Harry W. Smith, Tennessee Eastman Corp., pointed out that this depends on the yarns the mill wishes to make. 3 and 5

denier acetate are used to blend with 3 denier or 1½ denier viscose. Occasionally all three deniers are blended, the 1½ denier tending to keep the breaking strength up. The finer the yarn the finer denier should be used. To give the cotton goods a wholly hand, on 11s warp and 12s filling, 5 denier 15 per cent rayon would prove quite satisfactory. Also, the mills should not use under 3 denier acetate or trouble may be encountered.

The 1½ denier viscose is about the same size (diameter) as Peeler cotton, and the 3 denier is about the same size as the Carolina cotton.

Card and Drawing

One mill that is running cut staple has made no changes in the settings of the cards, except that the strips are brushed off at the back of the card and fall on the lap, where they are re-run. However, when running ratines, slubs, etc., the flats can be backed off as far as 84/1000-inch, according to one man, but if even yarn is to be made this is not possible.

The licker-in should not be set too close or the cut staple fibers may be broken. 16/1000-inch should prove a satisfactory setting. Tests are now being made as to whether the short or long nose feed plate makes any difference in the setting of the licker-in, and one member advised that with the long nose feed plate the settings had to be backed off.

The mills were cautioned against running the lickers-in too fast; the closer the speeds approach 200 r.p.m. the better. Speeds of from 360-440 r.p.m. are injurious to the cut staple.

S. W. Rabb, Erlanger Cotton Mills, Lexington, runs his lickers-in 320 r.p.m. and sets the plate from 16 to 18/1000-inch. This mill runs all rayon and not cotton-rayon blends.

Going to the discussion on running cut staple on the drawing frames, one man advised that he has not changed his settings because the staple length was not increased. However, he advised that if his plant went on long staple stock the settings would be increased between the rolls. Recommendations were given to set ⅛-inch wider than the length of the staple.

When called upon, R. E. Lindsay, Saco-Lowell Shops, Charlotte, told of a new picker that is being built especially to run cut staple rayon. The beaters will turn upward instead of downward on the stock, and the feed rolls will be set farther back from the beaters. A new card is also available, he advised, made especially for running of rayon. There are no flats on this card, but rolls covered with wire are on top of the machine. This machine is said to be doing a good job on staple up to 2½ inches.

When long staple cut rayon is used, beyond 1 9/16-inch, it is often necessary to use a different roll stand on roving frames so that the rolls can be set to conform to the longer stock.

According to members present, it is difficult to use the same twist multiple on rayon as on cotton, and often it is necessary to go as high as a 5.00 twist multiple for the warp and 4.00 for the filling when using cut staple.

Following the technical discussion, J. D. Scott, Proximity Mfg. Co., Greensboro; and S. S. Holder, Consolidated-Textile Corp., Lynchburg, Va., were elected to the executive committee.

Some Practical Mill Pointers

Preventing fungi growth in the weave room; a method of finding the distance between drafting rolls . . . . . .

FOR A NUMBER OF YEARS the writer has noticed that in weave rooms having even a slight condensation on the ceiling there is a growth of fungi at the place of condensation. This fungi soon eats into the wood, causing the roof to deteriorate. This condition is more prevalent in weave rooms that do not have another story above them. The same condition applies to slasher rooms and dyehouses where there is much moisture.

We have tried a number of things to eliminate the fungi, such as painting with a good outside paint, but the fungi always returns, probably feeding on the linseed oil in the paint.

We later discovered a way to prevent the growth of fungi in our rooms having condensation on the ceiling. We use a cold water paint composed of the drainings from an acetylene generator used in a welding shop in the city. The shop gladly gives us this residue whenever we call for it. We keep it stored in steel drums until it is necessary to paint the weave room.

It is better to get the residue from the acetylene generator as it is drained and keep it in the liquid form instead of permitting it to dry. We make the fluid about the consistency of whitewash and apply it to the walls and ceiling of the weave room. For about a day it looks dirty, but as soon as it dries thoroughly it becomes a very good white.

There is something in the acetylene residue that acts as an agent to prevent fungi growth. The solution, when applied properly, will last several years. It is also good for brick walls and concrete walls.

Distance Between Drafting Rolls

IN SETTING THE TOP ROLLS and steel rolls in the card room and in the spinning room for length of staple of the stock, it is usually the rule to use a small scale to measure the distance between centers of the rolls involved. I believe this method is inaccurate, being only an estimate; we have used the following method to get the exact "bite" of the rolls very quickly.

Taking for example the fly frame, the top rolls are removed from one spindle. We then take two pieces of thin white paper and place a piece of carbon paper between them. The papers need only be two or three inches wide and three or four inches long. These are placed on top of the steel rolls and the top rolls are placed in position. Give the top rolls a sharp blow with the fist. The blow will leave a clearly defined line at the places where the top rolls bit into the bottom rolls, caused by the carbon paper's impression.

Next, take a rule and measure the distance between the bites or lines shown by the carbon paper, and this gives a true setting of the rolls. Even if the top rolls and the steel rolls are not set the same, the true bite between any two sets of rolls may be found accurately this way.

Some Useful Mill-Made Tools

THERE HAS BEEN some discussion lately in COTTON concerning training loom fixers, and a little less on the training of other fixers in the mill. There is one important point that has been neglected—placing emphasis on the use of proper tools by the fixers. There is no denying that good tools aid in doing good work and that poor tools may cause bad work. Tools that *almost* fit are useless and the fixer that uses wrenches which do not fit or which have become spread until they do not fit properly will do more damage than good. However, tools that fit are not always the correct tools for the job because the shape of the tool may not be adapted to the position in which the fixer must work, even if the tool fits the nut.

A Fixer and His Tools

An overseer will be surprised at the tools he will find in his room if he takes the time to inspect the fixers' boxes. Most of the fixers will have some good tools in use, but the overseer will also find tools that should not be allowed in the mill, let alone be used on the job. A pair of pliers may be used in place of a wrench by some of the men; this is being done in a great many instances and if the reader does not believe it, let him look over some of the jobs and notice the odd size nuts or cap screws to see if they are worn round cornered. Some of the large nuts will have been tightened with a cold chisel instead of a wrench. Whereas a fixer is getting by when using just a few tools, think how much more efficiently he could work if his set were complete.

After all of the tools have been inspected the overseer will probably call some of the section men on the carpet and tell them to get the proper tools or get out. But before doing so, it is best that this subject be given a bit of thought. Whose fault is it that these men don't have suitable tools? Pick out any wrench and try to get one exactly like it; this is not always possible because the local dealer may not have it in stock and another tool, similar but not the same, will have to be used.

Something can be done about this at once. The mill can order the proper tools from either the tool manufacturers or from the machine builders, and at a discount which will mean much to the fixer. Catalogs are available and the tools may be ordered from them. Tools may be ordered as needed, but better still, the tools can be kept on hand and sold as needed. I consider this the best plan because the fixer can go to the supply room and buy the tools as he needs them without any delay, and if the tools are kept on display the fixer will not be satisfied until he has a complete set.

Note that I said the tools should be sold to the section men. I believe this to be the only successful plan because few fixers take pride in using or caring for tools that do not belong to them, and a fixer must have tools that he is proud of to be a good fixer. A good fixer enjoys bragging just a little about some of his pet tools; make it possible for the fixers to get tools that are worth bragging about.

Have the fixers ever been told just what tools are required to run their jobs? There should be a minimum amount of tools that each fixer must have on the job. Of course, this number will differ with the various makes of machines, etc. There should also be certain other tools that the fixer is required to acquire within a certain time, done in this manner so there will not be too much of a drain on his pocketbook at one time. Following this up, there should be an inspection of all tools on the job at least twice a year, with all that are not fit for use being discarded.

Notice how a fixer uses his tools. If he is using the wrong tool on a certain job, talk it over with him and show him the advantage of using tools better suited to that job. Don't let a fixer waste time taking a stubborn nut off an eighth of a turn at a time with an end wrench when he can run it off in less than half the time with a socket wrench. There are many other ways that proper tools can save time and cause the job to be done better too.

Provided that the mill is adequately equipped and that a comparable tool is not available from the tool manufacturer or machine builder, the fixers could be encouraged to fashion their own tools. If they do the preliminary work on a tool then they should be allowed to have the machine shop crew finish it for them. The preliminary work will remove the greater part of the load from the machinist and then the section men will remain where they belong. Any fixer takes pride in using a tool that he has made or assisted in making. Some tools cannot be purchased so must be made in the manner outlined. If it is thought necessary, a small charge can be made for the work done at the machine shop, but under all circumstances, the tool should belong to the fixer. Any extra cost to the company will be more than repaid by the fixers running their jobs well, and such work done in the machine shop is concrete evidence that the company is ready and willing to help the fixer have the proper tools to run his job.

I will give a few examples of the tools that can be made by the fixer, but again I must emphasize that if the tools are available from the manufacturer they should be bought there because the manufacturer is a specialist in his line and is able to furnish first class tools. But tools for all purposes are not available. The tools shown in Fig. 1 are wrenches made from snap-on sockets, commonly used by automobile mechanics. The fixers may have such tools or can buy them. Handles are fitted to the sockets out of either wrought

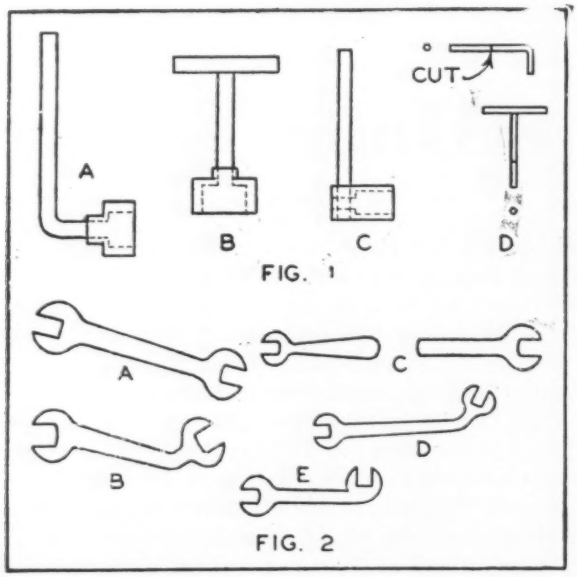


FIG. 1

FIG. 2

iron or cold rolled steel; scrap stock and short ends can be used for this. The handles are then filed or ground to fit in the handle end of the socket and welded or brazed in place. Three types are shown, offset at *A*, the T-type at *B*, and the short offset at *C*. Type shown at *C* is made from a long socket with a hole drilled through the upper end and the handle inserted Wrench shown at *D* is a safety setscrew wrench. It should be cut off about half way of the long shank and welded to a T handle. I have found an old spinning spindle just right for this.

These wrenches are especially helpful in the card and picker room. When the feed rolls of a picker become choked the top roll must be removed. There is a great pressure on the bearing caps because cotton is wrapped around the rolls and when the screw that puts the tension on the spring is loosened, all of the pressure is not relieved; this screw must be run all of the way out to prevent the cap from being broken. As these screws are usually close to the end of the eveners on the finisher pickers they are hard to get to with an ordinary wrench. A T-socket of the proper size and length of handle will get this screw out quickly. Another socket of the same type to fit the hold-down screws will loosen the caps a little on each side until the pressure is relieved and then it is a simple matter to take out the top roll. This particular job can be done in less than half the time required with end wrenches if T-socket wrenches are employed. On cards a wrench of the offset type, shown at Fig. 1, *A*, will go behind the doffer pulley and loosen the hold down bolts easily when the doffer is being set. A short T will take care of the licker-in bearings quickly. The safety setscrew wrench *D* is handier and quicker than the ordinary type in most places and is not so easily lost.

Looking at Fig. 2, *A* is an ordinary wrench of the size used by the grinders for setting the roll stands for the grinding rolls. By taking it to the shop and having one end bent as in *B*, it will reach the stands much better and will stand up straighter while the job is being done, enabling the fixer to see and hear the rolls better. While we are on the subject of setting grinding rolls, did you ever try a wrench made like the one in Fig. 2, *E*? These wrenches are made for automobile use, but they are just the thing for grinding stands; the reader may prefer the one shown at *E* to that shown at *B*. Another handy wrench to use on cards is shown at *D*. This one is made from two wrenches. I made mine out of an old single end wrench and another that had one end broken off; this is shown at *C*. These wrenches were both the same size, being the size of the doffer adjusting nuts, feed plate nuts, and licker-in adjusting nuts. I cut off part of the handle of each of the wrenches, leaving enough to make the finished wrench about one and a half times as long as the ordinary wrench; one end was also bent. This wrench is handy to loosen extra tight nuts and if the fixer ever has to work behind a strong man, it will be one of the most useful wrenches in the kit. Be careful in using it because threads can be stripped and bolts wrung off with it.

Other Practical Gadgets

Wrenches are not the only things that can be made at the mill. Fig. 3 at *A* shows a gauge for setting the can tables on the cards; set the first table with the use of a plumb bob as usual, then take this gauge and place it in the stand in place of the can table as shown in Fig. 3 at B. Loosen the wing nut and slide the end piece out until it touches the upright shaft, then tighten the wing nut. Set all of the tables by the gauge instead of using the plumb bob on each table and much time will be saved, and just as good a job done.

A wrench of the type shown in Fig. 1 at *A* is just the thing to reach the cap screws holding the table in place as they are recessed so that an ordinary end wrench will hardly get to them. The gear puller shown in Fig. 3 at *C* is a real time-saver for the fixer. It is merely a piece of heavy flat iron bent to the shape as shown and having a nut welded to it for the screw to work in. It is needed to pull the driving gear on

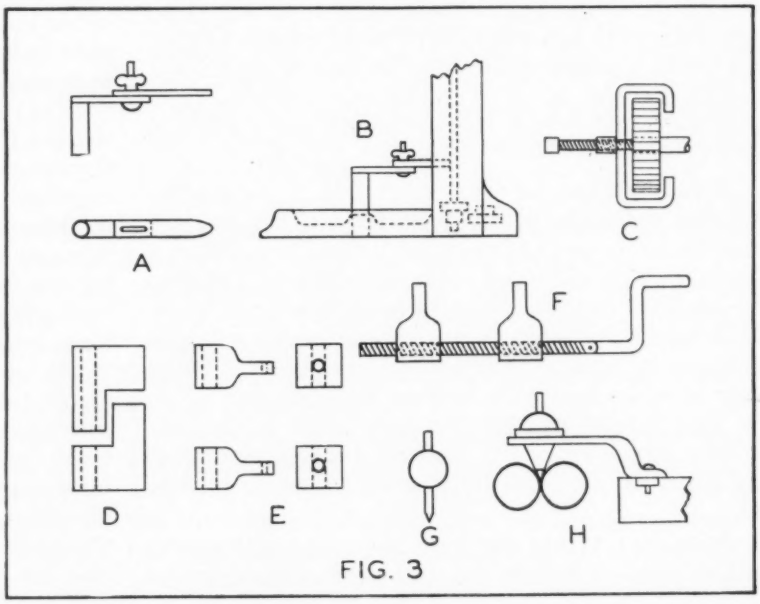


FIG. 3

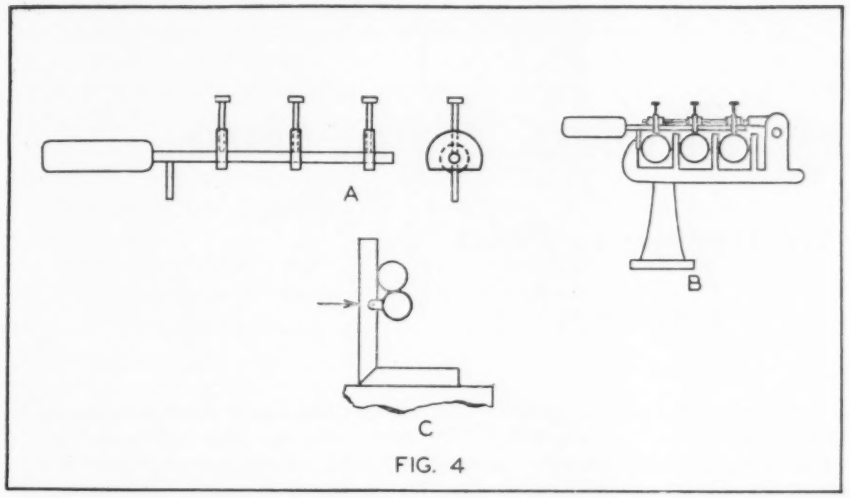


FIG. 4

the tops, licker-in pulleys, twist gears, and many other places. Every fixer should have at least one or two of these.

The tool shown at *D*, *E*, and *F* in Fig. 3 may be frowned upon at many mills but sometimes it will be found necessary to use it. Most men do not want to take up on the top flat chains, but occasionally it has to be done. All that is needed is an old builder that may be secured from a frame fixer to make this tool for taking up the slack in the chain while links are being removed. The old blocks are shown at *D*; have them put in a lathe and turned down as shown at *E;* also cut off the long shank on the upper block. The pins turned on them should be of the same size as the top flat screws and should have a hole at the end for a cotter pin. After turning down the blocks, put them back on the screw and bend the extension rod in the form of a crank and the tool is complete. To use the tool, remove several flats, run the blocks as far apart as possible and insert the pins in place of the top flat screws; put in the cotter pins to keep the blocks from slipping out; turn the crank and run the blocks together. This will furnish plenty of slack in the chain so that as many links as necessary may be removed while the top is being held in place.

The tool shown at *G* and *H*, Fig. 3, puts the finishing touches on what someone else started. The makers of one type of drawing frame have put out a gauge to set the distance from the bit of the calender rolls to the trumpet, but they failed to provide any means of setting the trumpet directly over the bite of the rolls. This little fellow does just that. As shown in G it looks like a small plumb bob with a long point. This should be made from tool steel and turned to fit in the trumpet, the point coming through the trumpet and almost to, but not quite touching between the calender rolls. It is used as shown at *H*; just drop it in the trumpet, loosen the bolt holding the trumpet arm, and adjust it to where the point will be directly over the bite of the rolls. To loosen this nut it is necessary to have a T-socket so it will be necessary to make one to fit. After adjusting, tighten down and then set with the gauge furnished by the builder and then all of the trumpets will really be in place.

In Fig. 4, *A* and *B*, we have what I think is one of the best roller setting gauges one can make. A 12-inch screw-driver makes an excellent handle for this gauge, or the handle can be made out of any material available. Just in front of the handle weld a piece the same size as the shaft and about two inches long at right angles, as shown. Cut the washers from two-inch shafting, one for each top roll (usually three), and the washers should be thick enough to just fit in the cap bars. Have them drilled in the center to go on the shaft and drilled and tapered for the small set-screws to hold them in place. Cut off the bottom as shown so that the gauge will set down on the steel rolls. To use this gauge as shown at *B*, remove the top rolls, lay the gauge on the steel rolls as shown with the short rod touching the front of the bottom steel roll, and set each cap bar to the washers. This will place each roll in position and allow the proper overhang to the front top roll. Of course, this gauge is only for the top rolls. Where such a gauge as described is not available, I suppose most of the fixers understand how to fix a common square to set the overhang of the top front roll. This is shown at *C*, Fig. 4. Drill a hole in the square and fasten a small slotted piece of soft metal to it. Use as shown.

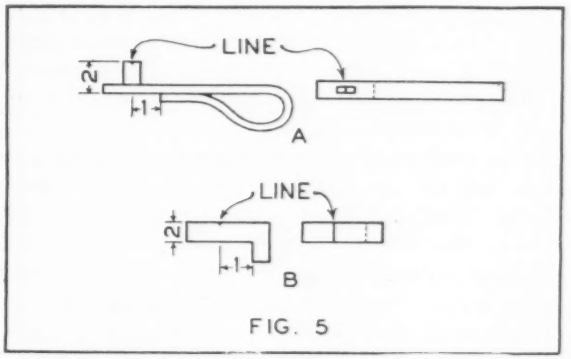


FIG. 5

Another time-saver is shown in Fig. 5. This is an improvement over the regular blocks used in lining and leveling a fly frame or other machine. Instead of making the blocks square as is the usual practice, make them L-shaped as shown at *B*. I also suggest making them out of aluminum. If some old pots and pans are melted they can be made easily. Be certain to have both of the blocks the same size. Instead of using a gauging block along the line, make the tool as shown in *A*, Fig. 5. This is made out of a light piece of flat iron, bent in the shape shown. Have a block of the same material welded on top as shown. The important parts to watch are the measurements (1) and (2). These should be exactly the same on both the blocks and the tool. Take care in marking the line on all three pieces and mark it deep with a hack saw blade or the corner of a file. To use, place the line on the frame and stretch tight. Put one of the blocks at each end with the shoulder against the

(Continued on page 71.)

Spinning Room Practice

By Horace L. Pratt

Article 6

IN THIS, the sixth installment of a series on spinning room practices, the author gives a detailed study of the builder motion. The series began in the March issue and was continued in the April, May, July, and August issues. Thus far general spinning practices, various types of long draft spinning, the drawing rolls, spinning rings and travelers, the spindle, and various kinks and short cuts have been discussed. Watch for the next installment in an early issue—it will take up systems of inspection and overhauling in the spinning room. This entire series could be produced in booklet form upon popular request of the readers. Would you like to have it for your library at a nominal cost?—The Editors.

THE DISTINCTIVE shapes of the bobbins of yarn from the spinning frame are obtained by the action of the builder motion. The actual winding of the yarn on the bobbin, as has already been explained, takes place as the traveler lags behind the spindle, guiding the yarn on the bobbin. The ringrails, supporting the rings on which the travelers are revolving, are traversed up and down regulating the winding of the yarn on the bobbin so that the layers of yarn will be even and regular, so that the maximum amount of yarn can be put on the bobbin before having to be doffed, and so that the yarn can be unwound at the next process without tangling and with a minimum amount of waste.

The ringrails are counterbalanced by the means of weights, and together they are moved up and down by the builder motion. There are several types of builders but all that we are familiar with are based on the principle of a cam acting upon an arm which is some form of lever. Then the gradual change that takes place, either in the shape of the bobbin as it fills up, or the position of the yarn on the bobbin is brought about by a change in the arm, the shape of the cam and the set of the builder. Usually the change that takes place in the arm, which is actually connected to the chains and levers raising and lowering the ringrails, is brought about by some form of lever screw which is actuated by a picking motion which is in turn connected to the ringrails.

The Warp Wind

For example the warp bobbin, which is probably the most common type of bobbin, is built similar to the bobbin of roving made on the fly frame; the first layer extends almost the full length of the bobbin, the second layer is slightly shorter and so on until the finished bobbin, with the familiar tapers on the ends. The heart-shaped cam is used which gives the simple up and down traverse that is changing rotary motion to reciprocating motion and on one make of frame, for an example, the chain that actually lifts the ringrails is fastened to a block which works on a lever screw which is parallel with and a part of the builder arm. At the start of the bobbin the block is wound to the top of the screw, which point is farthest from the fulcrum of the builder arm, thus giving the longest traverse of the rails. At each traverse of the rails the picking motion, by means of a pawl and a ratchet gear and through two bevel gears, turns the lever screw, moving the block downwards nearer the fulcrum and thereby shortening the traverse. This takes place throughout the building of the bobbin. This builder is illustrated in Fig. 1. Other types of builders are similar to this in principle but differ considerably in detail.

The Filling Wind

The next most common type of wind is for making the filling bobbin. The three or the four leaf cam is used, each leaf having one long side which gives a slow motion to the ringrails permitting the yarn to be wound closely, and a short side gives the ringrails a quick motion, spacing the coils of yarn farther apart, tending to bind the yarn on the bobbin. In this case the length of the traverse remains the same throughout the building of the bobbin but the builder motion is set so that the ringrails are pulled a little higher on each stroke until the bobbin is full. See Fig. 2 "D" and "E".

While it would be well for the section man to know the principles of the builder motion, it is of more importance that he know the adjustments of the builder on the frames on his section and how to correct something that has gone wrong with the builder. Usually the builder motions are fairly free from breakdowns. They are strongly made of good materials, they rarely get out of order and wear is usually very slow. For this reason a worn cam or cam roll may make quite a lot of bad bobbins before the section man realizes that these parts are wearing. The change at the end of each stroke should be quick, for if there is the slightest tendency for the ringrail to dwell on the change a "knot" as it is sometimes called will result from the yarn winding in one place while the ring-

rail is practically stopped. This may easily cause tangled yarn and a certain amount of waste. The cam roll often becomes choked with lint and will not turn but only drags as the cam turns. This causes both the cam and the cam roll to soon become worn. These chokes should be removed before they get so big the cam roll is stopped. The cam and the cam roll should be oiled at regular intervals with a good grade of compounded oil.

When it becomes necessary to work on the builder, or to change cams, blocks of wood (We'll confess that

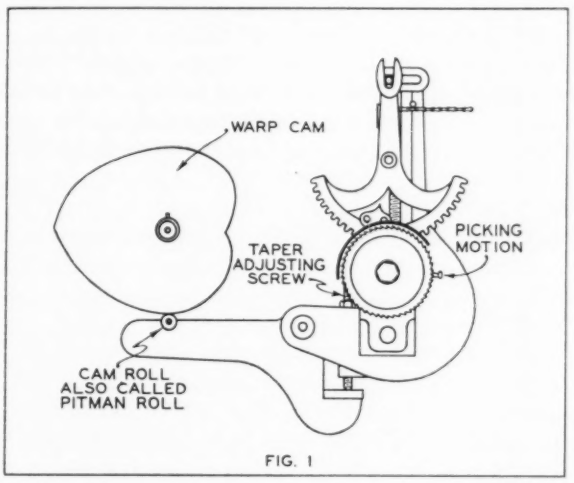


FIG. 1

as a section man we sometimes used bobbins) may be placed under one or more of the lifting arms, as the rails are being run down. As the lifting arms rest on the blocks the builder chain becomes slack and the cam may be changed or worn parts repaired. When the work is completed run the frame until the lifting arms are off the blocks then remove them. Builders, at least those made in comparatively recent years and called combination builders, are readily changed from one type of wind to another. The term combination builder should not be confused with the *combination wind.* The former refers to the builder that can be easily changed from one type of wind to another, with a few minor changes, while combination wind refers to a bobbin built with a long traverse, each layer being of equal length and slightly higher on the bobbin at each stroke.

Adiusting the Builder Motion

Before the builder can be adjusted properly it is necessary to level the ringrails. A gauge that rests on the spindle rail is used to determine when the ringrails are level. Adjust the lifting arms until the rails are level on both sides of the frame. Mark some bobbins at the top and bottom indicating the space to be occupied by the first layer of yarn. These bobbins should be placed on the spindles on both sides of the frame, at each end and in the middle. It is important that all the bobbins be marked the same distance from each end and that all of them fit down on the spindles good. In fact it would not be a bad idea to run a line to see that the marks on the bobbins are level. "Wind the traverse" so that the builder will make its longest stroke, then run the frame until the cam roll is on the point of the heart-shaped cam. The ringrails will then be at the highest point in the traverse. Mark on the bobbins the place where the rails stopped, measuring from the top of the rings, then run the frame until the cam roll is on the heel of the cam. Here again mark the position of the ring-rails, still measuring from the top of the rings.

If the distance traveled by the ringrails was not as great as the space marked off on the bobbins the stroke is too short. Fig. 2 "C" shows the adjustment on one make of frame for regulating the stroke. By moving the adjustment screw *up* the stroke is shortened while by moving it *down* the stroke is lengthened. After the stroke has been regulated the position of the traverse must be adjusted until the tops of the rings coincide with the marks previously made on the bobbins. This adjustment is done on the frame we are using for illustration as shown in Fig. 2 "B". By *taking up* on the *draw rod* (technically called the Philbow Rod), the ringrails are raised, while by *letting out* on this rod the rails are lowered. If irregularities are evident at any point, but not along the entire rail, the lifting arms may be adjusted individually to take care of this.

Setting for Taper

The next problem is the taper on each end of the bobbin. If the taper is too blunt the yarn is likely to slough off and make considerable tangled yarn and waste, while on the other hand if the taper is too pro-

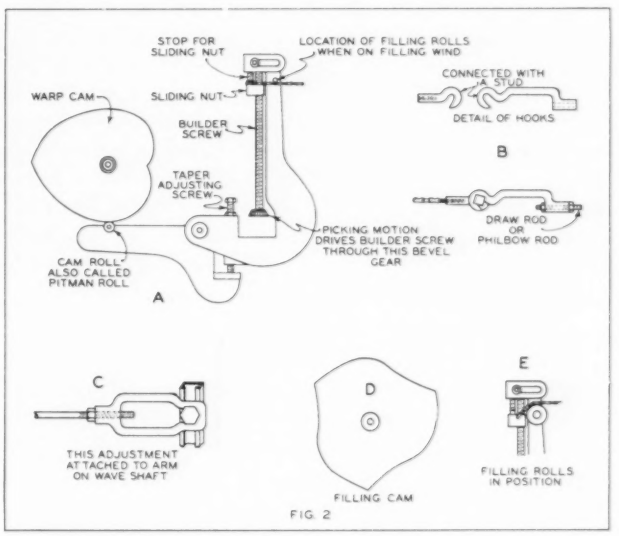


FIG. 2

nounced it is not possible to get the maximum amount of yarn on the bobbins so that the production is reduced. Experience is probably the best teacher here. We find the usual practice is to have the taper at the top slightly longer than the one at the bottom. The taper gear is a ratchet gear and is worked by a pawl each time the ringrails make a complete traverse. There is usually a shield of some kind that covers part of the teeth of the ratchet gear, and the more of the teeth that are presented or exposed to the action of the pawl the more the traverse will be shortened and therefore the sharper will be the taper. It is of course obvious that to make less taper it is only necessary to cover more of the teeth in the ratchet gear so that the pawl will come in contact with only a few of them and thus shorten the traverse only a small amount.

The relative length of the taper on each end of the

bobbin is regulated on one make of frame by an adjustment screw, Fig. 2 "A", which in effect changes the shape of the builder arm to vary the taper; in fact this builder can be so adjusted that all of the taper will be at the top, and as this builder is used on twister frames this method of adjustment makes possible the winding of yarn on single-head bobbins.

Each make of frame has its own type of builder and in recent years many improvements have been made. The new large package spinning frame, with its longer, heavier ringrail and long traverse requires a builder capable of operating satisfactorily under these adverse conditions. It is claimed for the new builders that they are so strongly built, all parts having to do with lifting the rails so well made and put together that the end of the ringrails farthest from the builder are lifted in line with the ends nearest the builder.

Because of the constant presence of lint in the air all about the frame it is almost impossible to keep the lifting rods from getting choked. Various methods have been employed to keep the lint from accumulating around the lifting rods, but it has been our experience that most of these give only temporary relief and sooner or later the lifting rods have to be taken out and the chokes cleaned out. Any interference at this point may cause a dwelling of the ringrail at the change of the stroke, resulting in a badly built bobbin. We have seen chokes that were so bad that they would prevent the ringrail from coming down, causing it to stop, winding the yarn all in one place on the bobbin. If a condition of this kind is not detected at once the yarn winding in one place may soon fill the ring causing the ends to come down. Sometimes a bobbin of roving may fall on the floor and get under a lifting arm, preventing it from completing the downward stroke. This will cause the bobbin to be tangled at the bottom unless the roving bobbin is removed before the traverse makes many trips.

Speed of the Ringrail

In regard to the winding of filling yarn we have already stated that the filling cam is so designed to give alternately a slow and a fast motion of the ringrails. There are differences of opinion among some mill men as to whether the fast motion, which tends to bind the yarn on the bobbin, should be on the up-stroke or on the down-stroke. The fast motion on the down-stroke seems to bind the filling on the nose of the quill better, but starting the fast stroke at the top, where the angle of traveler pull is greatest, may cause more ends to come down, causing the spinning to run bad. However, considering the difficulty that the weave room would have with soft-nosed filling, which might slough off in the shuttle, it is probably better to have the up-stroke slow and the down-stroke fast.

One kind of filling cam has the leaves so designed that the layers of yarn are not wound on the bobbin in a regular fashion, each layer slightly higher than the other, but one layer is wound on, the next will probably be slightly higher, the third layer will drop lower and the fourth layer higher. In this way it is claimed that the binding of the yarn is better than when each succeeding layer of yarn is higher.

Theoretically the lay gear would be changed every time there is a change in the yarn number, but actually the lay gear is rarely ever changed. The lay gear drives the builder motion so that a change in this gear affects the speed of the builder; if the builder is slowed down the ringrails will travel slower and the coils of yarn will be closer together, while if it is speeded up the ringrails will in turn travel faster resulting in the coils of yarn being farther apart. It will be noted that in the case of roving made on the fly frame the roving is so laid that the coils practically touch each other. This makes it necessary to change the lay gear each time any appreciable change is made in the number of the roving. While we have never attempted to wind any yarn with such a slow traverse that the coils would lay close together as the roving might, we are of the opinion that the hard twisted yarn wound in this manner would have a tendency to slough off, for we think that for the coils to be spaced somewhat permits the layers to cross over each other thus tending to bind the yarn, making a better bobbin. On the other hand if the coils are too open, that is if the lay gear is such that the ringrail travels too fast, the crossing of the yarn will take up a lot of space so that the maximum amount of yarn will not be wound on the bobbin. For very coarse yarns the traverse will, of course, have to be faster than for very fine yarns. We recall changing the lay gears in a large spinning room, slowing the traverse somewhat, resulting in the frames running 10 minutes longer between doffs. This meant fewer stops for doffing over a period of time, with a small gain in efficiency for the spinning room, longer lengths of yarn without spooler knots, and of course better spooler efficiency. It is evident that possibilities in this connection should not be overlooked by the overseer of spinning.

Draft and Twist Gears

The changing of draft and twist gears is not usually thought of as being very difficult. These operations are not always as easy as they seem. In the first place the section men should have wrenches that fit properly the nuts that must be loosened. A wrench that does not fit will soon ruin the nuts, besides causing bruised and skinned knuckles and loss of a lot of valuable temper. We believe it to be the general practice for the section men to furnish their own tools, but the foreman should insist that the men purchase good tools suited for the work to be done.

It may look easy to change the draft gears on a frame, but if all the ends do not come down the first time you try changing draft gears, then you are having better luck than we had. This tendency for the ends to come down, or at least for a thin place to be made, is no doubt caused by the back roll turning slightly backwards when the crown gear is loosened to remove the draft gear. This is especially true on the new longer frames. Various methods are employed to prevent a thin place or the ends coming down when changing gears, a screw-driver being sometimes used to hold the back roll gear in place. One concern has put out a back roll adjuster which does the trick very neatly. While no gears should be meshed so deeply that they bind, the teeth on draft gears are so small

and shallow that the teeth must almost "bottom" or there is likely to be slippage.

Draft gears should be correctly marked with the number of teeth and they should be stored in a special place provided for them. This may be a room where twist gears and possibly rolls are also kept, or in a small spinning room it may be just a cupboard or a cabinet, but by all means have some kind of system for keeping the gears so that the right gears may be found with a minimum of lost time. The section man is held responsible for cleaning all gears removed from frames on his section and seeing that they are placed in the place provided for them. In a large spinning room it would probably pay to keep all gears and rolls in a store room with a keeper in charge who would issue these out on an order from the overseer or the secondhand. In this way errors in draft and twist gears will be held to a minimum.

It is often difficult to change twist gears so that they will run without making a lot of noise. This noise, usually a roaring sound, is frequently caused by setting the gears too deep in mesh. On the other hand if the gears are set too shallow they will have a back lash, and will also wear quickly. There should be a slight clearance between the end of one tooth and the bottom of the space between the two corresponding teeth on the other gear, just what this space should be has been figured out by experts, but in actual practice we find experience to be about the best teacher.

Troubles from Worn Gears and Studs

Worn gears and worn or loose studs will cause a noisy running frame. Machine builders generally recommend that gears made by them especially for the particular frames they build will give better service, last longer and are quieter, as a general rule, than gears made by outside concerns. They contend that as it is to their interest to see that their frames continue to give good service to their customers, and they are naturally careful in the making of supply parts that fit perfectly and that are of good materials. While the writer has no special interest in any make of supply parts we suggest that the overseer of spinning check all new gears to see that they are up to standard. If new gears are noisy have the secondhand check the setting of the gears, and if after being set correctly they are still not quiet, have the master mechanic check the gears to see that they are manufactured properly.

Usually the gears in the head of the frame are enclosed to prevent accidents and to protect the gears from lint and damage. The head end of the newer frames is made so that it cannot be opened while the frame is running. Oil pipes extend from the bearings to a convenient point at the side of the frame so that the frame may be oiled without having to open the doors of the frame. The oiler should keep these oil pipes clean so that the oil will reach the bearings. Occasionally the doors of the frame must be opened and all the gearing thoroughly cleaned.

Most of the late model frames have ball bearings for the cylinder. Older frames have been equipped at the mill with these ball bearings. The plain bearings were often a source of much trouble and inconvenience when the oil holes would become choked. Then the lint would get into the bearing and cause wear. The use of oil pipes helps this condition but they must be kept free of lint, or they will soon become stopped up. Whatever type of bearing is in use a certain amount of attention is necessary. Grease must be put into the bearings at regular intervals, using the grease recommended by the maker of the bearing in use.

The under parts of the frame should be cleaned frequently to prevent accumulations of lint around the bearings and the cylinder shafts. A cylinder that is out of line and hard to turn will consume too much power and probably lower production. A wobbly cylinder will wear out a lot of bands. When frames are being overhauled the cylinders should be gone over carefully for this is the best time to repair or replace bad cylinders.

A summary of bad spinning caused from the builder, the gears and the cylinder follows:

Ringrail not level:	Tangled bobbins; yarn too high or too low on bobbins.
Taper too blunt:	Yarn sloughs off.
Taper too sharp:	Cuts production as yarn fills up inside ring too quickly as traverse is shortened too much on each change.
Worn cam:	Causes ringrail to dwell on the change, thus the yarn builds up at the top or bottom, sometimes at both places, making a high place or a knot, which may easily tangle on the spooler.
Choke around cam follower:	Causes cam follower to drag wearing cam.
Lifting rod choked:	Stops end of that section of ringrail supporting the choked lifting rod causing yarn to wind on in one place, making tangled yarn and causing ends to come down.
Gears not set correctly:	Ends down; thin places in yarn.
Gears set too shallow:	Worn gear teeth; gears jumping, causing bad places in yarn.
Gears set too deep:	Noisy running gears.
Worn gears and studs:	Noisy running gears.
Cylinders out of line:	Burned out bearings; consume extra power.
Wobbly cylinders:	Same as foregoing; excessive wear of bands or tapes.
Cylinders with loose laps:	Excessive wear of bands or tapes.

(The seventh installment of Mr. Pratt's series on spinning room practice, to appear soon, will cover in detail the general subjects of machine inspection and overhauling, etc.—The Editors.)

Some Practical Mill Tools

(Continued from page 67.)

front of the roller beam and place the line in the grooves marked for it. Now take the gauging tool and test along the line; the height of the tool gives the level of the frame and by looking down at the line groove and the line, the alignment of the frame is determined. The line will not have to be moved for aligning the frame as would be necessary if the ordinary three blocks were used.

These are just a few of the tools that can be made at any mill. Many of them cannot be obtained at any other place. The fixers know of many special tools and gauges that will be a real help in running the job. Give them the chance to get them and you will find them the greatest help in running the job that you ever had.

Institute Meeting Considers Problems Induced by War

THE 13TH annual meeting of The Cotton-Textile Institute, held at the Waldorf-Astoria Hotel, New York City, on October 25, convened, as President Murchison said, "in an atmosphere of hope and optimism", and was featured by a program of excellent addresses that gave emphasis to problems and dangers of the industry induced by the prevailing improved conditions resulting largely from the European war.

Claudius T. Murchison, president of the Institute, presented in his annual report in that capacity perhaps the most able and statesmanly discussion of industry needs and opportunities of his career in this position. A. D. Whiteside, president of Dun & Bradstreet's, an old friend of the textile industry, in his short address following that of Dr. Murchison, analyzed present conditions and prospects in a completely able and informative way.

Asks for Production Caution

Dealing first and primarily with conditions and problems that lie immediately ahead for the textile industry, Dr. Murchison showed that forces of recovery had set in by August 1, giving no reason to doubt that the foundations of business improvement were laid in normal course and are firmly based; and that the outbreak of the war merely intensified the recovery forces with great suddenness. Any reason for worry, he said, has to do only with the superstructure of prices, production volume and terms of sale, and pled with the industry to be cautious to avoid the excesses in these directions that wrecked the 1936-1937 recovery. Declaring that the welfare of a mill is not determined by the prices of a week, a month, or even of a year, but that whereas "in the past we have habitually climbed mountain peaks only to fall immediately over precipices," "our concern now is not with the maximum height which prices may reach but with the maintenance of satisfactory prices over a long period" so that "when we emerge from the price valley we are now leaving, we should like to plant our feet safely upon a broad plateau bounded only by the horizon." To this end, he strongly urged, first, that production be held within the normal operating schedules. Any considerable divergence from normal operations, which for most mills are 80 hours per week, will he said, "in a comparatively short time check the momentum of prosperity and definitely destroy any hope for better conditions for many years to come."

Avoidance of full third-shift operations, despite its manufacturing economies, is urged "not because of brotherly love or intangible devotion to the industry" but because "it is sound business judgment", since its economies necessarily mean increased production which gluts the market and reduces prices by an amount greater than the economies which were sought for.

"Avoid Long-Term Contracts"

Second, he completely endorsed a a policy of avoiding excessively long-term contracts, particularly those of the blanket variety, since their wide use indicates the approach of a dangerous speculative situation and serves as a force to intensify the subsequent period of recession. "The growth of unfilled orders in a rising market is, up to a certain point, highly desirable and even necessary, but if progress beyond that point is accomplished mainly by increasing the average time span of the contracts, that is no reflection of increased demand in the economic sense of the word. * * * Although presumably the risk is taken by the buyer, in actual practice it also devolves upon the seller." He favors a time limitation of three months with the exception of fully specified contracts involving no uncertainties as to the character of goods or times of shipment.

From past experience, he said, "we know that if business recessions come at a time when the majority of mills are sold ahead from four to six months, the effects are three-fold: First, many buyers are unable to receive full deliveries. In the second place, there is a long period during which the making of new sales is virtually impossible. In the third place, the markets are thrown into great confusion because of the hidden or indirect price compromises which are being made on existing contracts. Fourthly, buyers find themselves loaded with excessive high-cost inventories which should never have been produced and which must be worked off at ruinous prices.

"Given our present abundant supply of cotton, our adequate capacity to manufacture goods to meet long-term requirements, it is in my opinion impossible for cotton goods prices to become excessively high except through the process of accumulating speculative inventories in buyers' hands. Such a development can at least be discouraged by determined insistence on contracts which are sound and devoid of speculative ingredients both as to quantity and time."

Dr. Murchison reviewed the industry's activities through the Institute during the association year, noting that the organization's functions had broadened to include work on the production and marketing and financing of cotton. He cited the real and potential dangers of the cotton export subsidy which the Institute unsuccessfully fought. He reported on further progress on the use of cotton bagging for cotton bales, declaring the experiment is sufficiently important to justify patience and some annoyance to the mills. Other promotional efforts covered included emphasis upon the Cotton Consumption Council.

Referring to the Federal wage-hour legislation, Dr. Murchison took note of the conflicts within the industry sectionally, which, he said, threatened for a time the maintenance of the Institute. Happily, he continued, the crisis has been successfully traversed, and there is now a greater frankness and a greater recognition of the nature of mutual interests and a willingness to place above all other considerations the necessity of industry unity; and said that now "the Institute will stand forth stronger than ever, more definite in its policies and more effective in its activities."

The Institute president declared that to his judgment the Fair Labor Standard Act supersedes in effect the Walsh-Healey Act, and urged repeal of the latter to avoid "multiple wage scales, determined and administered by separate agencies, and all in the alleged interest of the same general objective."

Mr. Whiteside also brought the textile manufacturers a message of caution against excesses in operation, and emphasized the necessity for a profit from business operations. That some form of Government action to insure profits is inevitable is obvious, he said, since business cannot operate without a profit, and prevailing government expenditures cannot continue without increased taxes. As to the war, he made

it plain that American business cannot detach itself from it, nor remain uninterested in the outcome. He predicted a continuation of good business, possibly some improvement, with notable increases coming in this country's business with Latin-American countries.

At the luncheon session, M. D. C. Crawford, research editor of the Fairchild Publications, who is supervising the production of a moving picture on the cotton industry, told of progress and plans in this work and urged wider co-operation and contributions to the cost on the part of the industry.

Paul Hollister, executive vice-president of R. H. Macy & Co., Inc., was the first guest speaker on the afternoon session, discussing means of increasing cotton consumption through retail channels. The second speaker was Milo Perkins, president of the Federal Surplus Commodities Corp., who told of the corporation's activities in disposing of the government cotton surplus. He mentioned that successful use of the stamp plan in handling surplus foodstuffs caused him to study the advisability of applying it to cotton. The anticipated procedure is to study the average purchases of cotton goods by families in different salary groups, and provide "stamps" that will permit securing twice that amount at no additional cost. For instance, in the group with incomes of $500 or less annually, statistics indicate a family spends about $17.00 a year normally for cotton goods. Stamps would be issued enabling such a family to get an additional $17.00 worth of cotton goods free.

Hillery Discusses Exports

Frank H. Hillery, president of the Textile Export Association, was the final speaker, discussing recent developments in the export field for cotton goods. He said the declaration of war brought an influx of millions of yards of export business, mainly for countries regularly using American goods. Latin America, he said may be expected to increase its American textile purchases in the event of an extended war. Since the last war, he said, some Latin American countries have made marked progress in textile manufacturing, notably Brazil, Mexico, Argentina and Colombia, but the textile mills in most of these countries can supply only a comparatively small part of the countries own needs. "Brazil is the largest textile manufacturing country in Latin America and has close to 300 mills. Mexico ranks second with probably 100 mills, whereas Argentina has less than 50, but the average size is larger than those in the other countries. In Argentina, for instance, it is estimated that the local industry, even by working two shifts, could take care of only 20 per cent of the country's needs. Therefore, there is prospective volume for us in Argentina in the event that present restrictions against American textile imports are lifted and provided that dollar exchange is made available without premium."

Nevertheless, Mr. Hillery said, the Philippines represent our foremost export market; and urged the industry to action to prevent the termination of trade relations which would prejudice both the United States and the Philippines.

Concluding, he said, "There is reason to believe that with the continuance of war conditions we will increase our export volume to the 1929 maximum of 564,000,000 square yards, which would mean a gain of 250,000,000 square yards over last year's figure of 319,000,000."

The Institute board of directors, after the general meeting, elected the following officers for the ensuing year: Goldthwaite H. Dorr, chairman of the board; Claudius T. Murchison, president; Charles F. Broughton and Kemp P. Lewis, vice-presidents; and Paul B. Halstead, secretary-treasurer. The following were elected to the executive committee: Robert Amory, Nashua Mfg. Co.; Howard Baetjer, Mount Vernon-Woodberry Mills; Fuller E. Callaway, Jr., Callaway Mills; J. A. Chapman, Jr., Inman Mills; Herman Cone, Proximity Mfg. Co.; and G. H. Milliken, Dallas Mfg. Company.

Textile Association Executives Meet

On October 24, preceding the Institute meeting on the 25th, Dr. Murchison of the Institute met again with officials of the various textile trade associations for an informal conference on matters of mutual interest to these organizations. A morning meeting, well attended by secretaries of a majority of the trade associations, was devoted to a review of current and prospective conditions in various phases of the industry and a discussion of means whereby these organizations could make themselves of greatest usefulness in their respective fields. At the conclusion of the meeting, Dean Hill, of the Durene Association, showed a moving picture, "King Cotton's Crown," prepared and distributed by his organization in the interest of Durene yarns.

Organized three years ago, to meet annually in conjunction with the Institute convention, indications are these association-executive conferences will convene more frequently in the future.

Wage-Hour Developments

Last year The Cotton-Textile Institute met on October 27, three days after the wage-hour bill went into effect. Elmer F. Andrews, the administrator of the law, was the featured speaker on the program.

This year, the Institute's 13th annual meeting came on the day set for application of an increase in the minimum from 25 cents to 32½ cents in the textile industry, and a reduction in the maximum working hours per week from 44 to 42. Mr. Andrews attended one of the Institute sessions in a personal capacity, having recently resigned as administrator.

On Saturday, October 21, the Fifth District U. S. Circuit Court of Appeals in New Orleans granted a petition of the Opp (Ala.) Cotton Mills staying the application of the 32½ cent minimum in the states of Georgia, Florida, Alabama, Mississippi, Louisiana and Texas; the court granting similar petitions to other mills in these states which put up bond of $10,000 each. Several other small mills in the Fifth U. S. District had at this writing made similar petition, which must be filed within 60 days subsequent to the issuance of the wage order. Since the order was issued on September 29, 1939, petitions for intervention must be filed prior to November 30, 1939. Reports indicate that the court will make its review of the case, for which the petition was granted, sometime in December.

While a small proportion of the industry participated in the original petitions, mills were urged to consider carefully the several aspects of the confusing situation that has resulted. The situation involves the possibility of serious labor relations problems, through failure of mill employees to receive the higher minimum wage which they have been led to expect. If the restraining order should be vacated or upheld, possible labor difficulties may be induced. Economically, on the other hand, there is the confusion in the competitive position resulting from the reduced labor costs of the mills that intervene in the proceedings.

Broadly speaking, it appears that the greater percentage of mills adjusted their wage rates to comply with the minimum, wherever changes were necessary to achieve this, and in the confusion of the situation, it should be emphasized that the New Orleans restraining order refers solely to the application of a 32½ cent minimum, and in no way affects the validity of the statutory minimum of 30 cents per hour which, under the original law, became effective on October 24.

CURRENT TEXTILE TOPICS ....

Sound Mill Status Comes from Influence of War

DECLARATION of war on September 3 started a forward movement in business in this country which for nearly a month developed tremendous proportions. A status of war, but with war on the whole deferred—the "phoney" war, as it was soon dubbed—then created a new uncertainty and the middle of October found business more or less stalled. But the outlook for industry was assured for several months. The first effect of the war had been to stimulate normal domestic recovery.

In other words, a sound position for the cotton industry toward which mill men were soundly striving through the summer emerged suddenly under the influence of an artificial influence—the buyers' fear of being caught short of inventories and paying war-time prices. But in like manner as the realization that demoralization akin to that of 1914 on outbreak of war was a mistaken notion, it developed in a few weeks that expectations of a boom also were misplaced.

Both such discoveries were to the good of business. After the demoralization in the first months of the World War, came the runaway markets of succeeding years. And came the disastrous reaction afterward. The boom was a boomerang. It has been remembered. The conditions of this fall—with war countries and others long anticipating the conflict—were not such as to create an immediate boom and, if they had been, old experience was such as to make business men wary.

Cotton Goods Are Firm After Rise

For several weeks, cotton manufacturers had the rare experience (in recent years) of finding a ready market in their cloths on a sharply rising trend of prices. This was part of a general scramble for goods which in some lines brought prices that created immediate talk of "profiteering". That was largely a bugaboo raised by the rapidity of advances, since prices had been on a low level, and the market for cotton goods particularly had been drastically depressed.

Rising prices for cotton goods in September started from a basis below costs of production. It was that condition which caused the industry to institute curtailment on a wide scale through the summer. Not until the upward movement of prices in September had proceeded for several days, in fact, did the market reach above costs levels. October brought with it a lull, but prices had been restored only to reasonable figures.

Recovery under the war, meantime, had first removed a burdensome mill inventory and then created a backlog of unfilled orders which assured mill operations at capacity for several months ahead. In such a sound position, mills were placed to withstand a considerable period of slow trading, with the inevitable pressure on prices, and manufacturers were slow to yield a hard-won reasonable standard.

Increased Business Predominantly Domestic

Naturally the persistent discussion of possible peace negotiations was an unsettling element in the October business situation. It was a prevailing sentiment that the realization suddenly of cessation of hostilities would cause a weakening of the price structure at large and a period of disorganiaztion in business. The psychological reaction alone would be disturbing, since the war had furnished the impetus to business activity.

Here again, however, the distinction between the influence of war in stimulating business and the soundness of such business apart from war is important. As stated by Howard Coonley, president of the National Association of Manufacturers, "The present upturn is predicated almost entirely upon domestic business." He found no prospects for immediate large orders from Great Britain or France.

Cotton mill men were themselves still in the stage of merely considering rather than accepting foreign business in volume as a result of the war. In other words, they were aware that the heavy backlogs were based upon recovery in domestic business precipitated by the war. Hence many traders were of the opinion that return of peace would leave the market with an underlying soundness and price stability with small recession.

Healthy Conservatism

Long-continued war, it was recognized on the other hand, would create new world markets for American production among both belligerent and neutral countries. A sane view toward war business prevailed after the September splurge, however, as actions are followed by equal reactions and the benefits of a boom are nullified by consequent depression. Sad experience led sellers of textiles, as well as other products, to quick avoidance of business along unduly speculative lines.

At last accounts, moreover, only a few mills had rushed into production on the dangerous three-shift basis. A long war might absorb the production of the American industry on an extended basis. The apparent reluctance of combatants for many weeks to give up the idea a real war might be averted counselled conservatism in mill operation.

Rush S. Dickson, of R. S. Dickson & Company, investment securities firm of Charlotte, expressing alarm over three-shift resumption, made this significant comment: "I retired from textile manufacturing 20 years ago, but have maintained intimate contacts with various mill executives, and at no time until 1938 had I found the least encouragement sufficiently bright to justify investors in placing additional funds in the industry. I then saw sufficient concern within the industry in evidence to justify the belief that the mill executives had at last deemed it wise to regulate production to conform with consumer demand."

Caution on Export Trade

As to expansion of foreign markets, mill men were advised to proceed cautiously because of several angles in such business. Dr. Murchison of The Cotton-Textile Institute stated that numerous inquiries were being received and that the foreign demand for American cottons would increase in the event of continued war in Europe. Some mills were deterred from accepting business by many difficulties entailed under the prevailing circumstances.

Discussion of such business at meetings in October led to realization that changes proposed in the Neutrality Act would bar exporters from using American ships to more than 60 per cent of the usual destinations. It was brought out that exchange difficulties would continue to hamper business with South America, albeit the countries there were seeking new sources for merchandise commonly purchased in Europe.

Lack of permanence in export to

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some South American countries was indicated, moreover, in the fact that they are working toward the establishment of textile manufacture at home. Incidentally, it was noted that steps are being taken toward establishment of mills in the Philippines, with independence due there in about six years (1946).

New England Mill Situation

Cotton mills of New England consumed 27 per cent more raw staple in the first eight months of this year than in the corresponding period of 1938. In view of the sound policy pursued, viz., holding production close to orders as a rule, this consumption reflected larger demand for goods. Unfortunately, however, the business was done in a conservative market wherein manufacturers struggled vainly to secure profitable prices.

Another month changed this condition, by virtue of the war's influence. By October the mills on the whole were supplied with unfilled orders far in excess of inventories. They were running on a profitable basis and expect ed to show the normal seasonal increase in activity through the last quarter of the year. First orders in the big buying wave were taken at low prices, then mills found themselves in the driver's seat and lifted the market to a healthy level.

Curtailment of the summer in coarser goods production, with its improvement of the statistical position all around, indirectly helped the predominantly fine goods division in New England when buying attitude changed. Expansion of demand for cotton goods to go into industrial uses also relieved pressure upon general values. The long concentration of competition in a sub-normal diversity of lines had been prejudicial to profitable prices in each division.

Best Situation Since 1936

Both last year and this, said the October report of the New England Council, the industrialist in the fall had to face extraordinary conditions. They were similar in effect, though differing in cause. A year ago it was the hurricane on September 21 and flood rehabilitation. This year he was confronted with the problem of adjusting policies to meet the European situation.

Both in August 1938 and 1939 the council's index of business activity was at a new high for the respective years. From May to August general activity increased 10 per cent this year. It was stated in the October report that August showed greater than seasonal increases in many lines, including cotton spindle operations. The industrial outlook for the fourth quarter was considered the best since 1936, barring unfavorable developments abroad affecting the situation.

October found most of the cotton mills operating on the two-shift basis. Meantime, the lull which pervaded business coincident with "threats" of peace in Europe had its effect upon buying of cloth. The mills were holding a firm attitude on prices, however, in view of the heavy orders for months ahead. The higher prices were not expected to hamper trading so long as the merchandising momentum was not impeded.

Wary on Export Business

Following the broad upward swing of business in September, a meeting of 200 New Englanders interested in foreign trade was held to discuss the outlook for business abroad. The opinion was unanimous that a substantial business would develop from the war's dislocation of commerce, especially with South America. Equally unanimous was the opinion that caution should be exercised to avoid the pitfalls of 25 years ago.

Eugene P. Thomas, president of the National Foreign Trade Council, told the assembly that "an expansion of New England trade with South America would aid in solving the unemployment problem". However, he added that "if we are to avoid the mistakes of the previous war period, we will refrain from seeking short-term profits without considering the possibility that these ultimately may become long-term losses."

W. Latimer Gray, vice president of the First National Bank of Boston, in charge of its foreign department, foresaw a substantial increase in general business with South America. He expressed belief, however, "that England will make a tremendous effort to maintain its export market for textiles. Regardless of how Congress may act on the embargo and regardless of goods shipped to belligerents, I believe the United States may expect a decided expansion in foreign trade."

Wage and Other News of New England Mills

Apart from the establishment of minimum wage standards on October 24, under the Federal act, the textile workers of New England were quick to seize upon the September boomlet in business to demand higher wages. The Rhode Island Textile Association characterized a demand of the U. T. W. for a 20 per cent increase as profiteering.

By October 13, however, the Fall River cotton mills had agreed to submit a definite wage increase on November 1, to became effective six days later. This was the result of conferences between the union leaders and the Fall River Cotton Manufacturers Association. The action affected 18,000 textile workers. The amount of the proposed increase was not named at the time of announcement.

In the big textile center of Lawrence, Mass., particularly woolen mills, prompt demands were made for higher wages to cover the increased cost of living. At Dover, N. H., the Cocheco division of the Pacific Mills was subject to a demand for 20 per cent increase. Part of the demand was for restoration of a reduction accepted last year when conditions were poor for mills.

Among the results of the pick-up in business through September was the increase of 50 per cent in operations by the Manchester division of the Chicopee Manufacturing Corporation. This means the addition of 200 workers or more. Much new machinery is involved

While the war had some influence, this enterprise has been doing well. The company took over the Coolidge mill of the old Amoskeag plant in the fall of 1936. It has been run full time since. Last summer the workers were put on four shifts of six hours each. The plan is reported successful.

Auguste Richard has been appointed vice-president in charge of sales and merchandising for all divisions of the Pacific Mills. He was president and director of the Spool Cotton Company from 1930 and also president of its affiliate, the Crown Fastener Corporation, since 1936. One time he was a junior partner in the commission firm of Lawrence & Company that acted as selling agents for Pacific Mills until 1926. He was later treasurer for Ipswich Mills.

Greenville Mills, Inc., a new enterprise, has taken over the old Denum Mills, of Greenville, N. H., for the manufacture of rayon products.

Corriher Mill, Landis, N. C., has built an addition which provides 40,000 square feet of floor space. The addition will double the capacity of the mill, which manufactures fine yarns. It is understood that 8,000 new spindles and 80 cards will be installed.

Jerome Newman has purchased and will continue the operation of the Algonquin Printing Company, Fall River, Mass.

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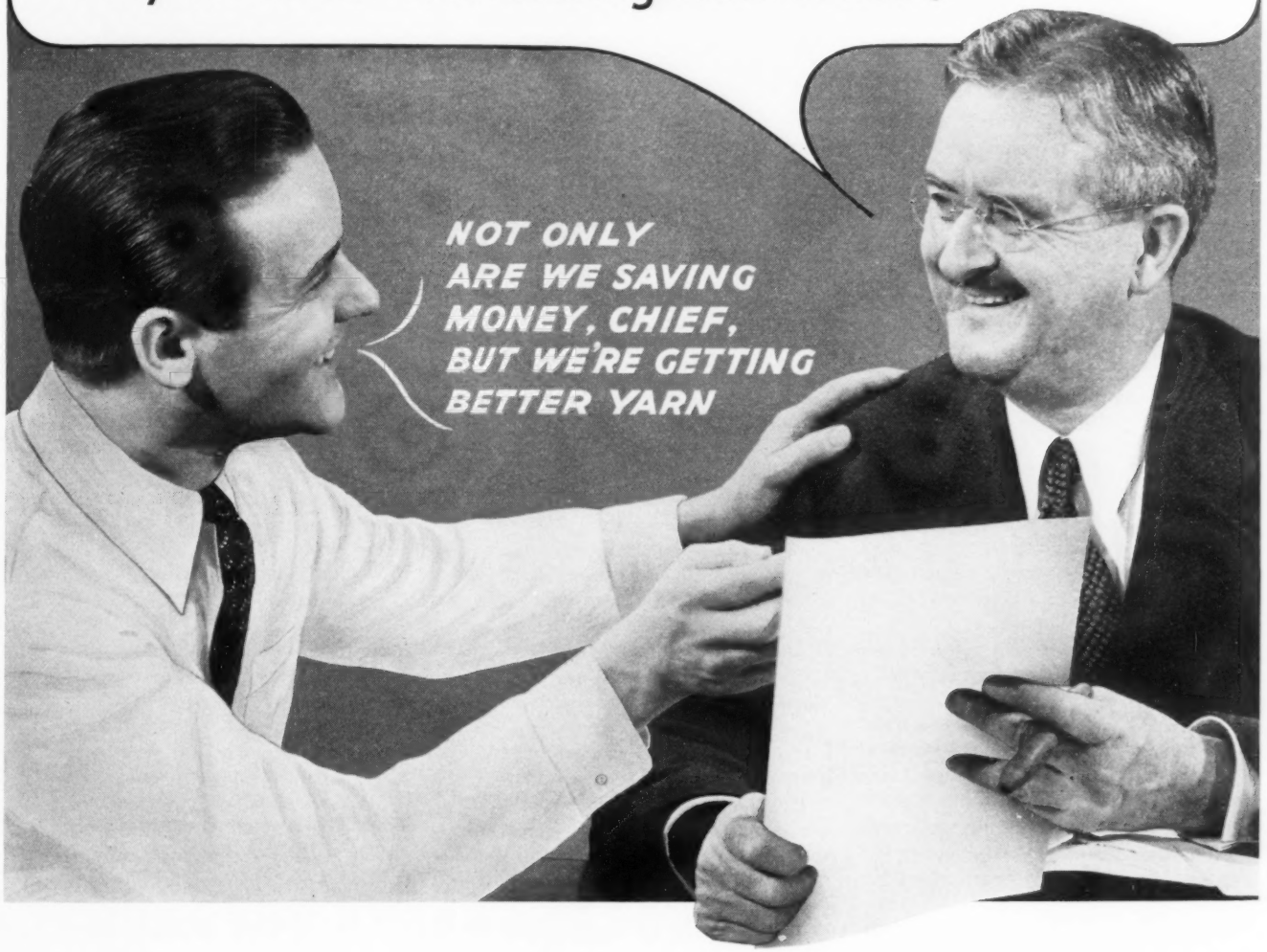

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Now, how about the quality of your product? Because of cork's higher coefficient of friction, you get stronger, more uniform yarn. You get better running work, too. For cork assures fewer top roll laps, less end breakage, and far less clearer waste. Eyebrowing, also, is practically eliminated.

Best proof of the efficiency of cork as a roll covering is that more than 7,000,000 active spindles are now running on Armstrong's Seamless Cork Cots. Let an Armstrong representative show you how your mill can cut production costs and step up quality with a change-over to cork. Ask him to show you actual production figures of mills spinning your range of numbers on cork cots. Or write Armstrong Cork Company, 923 Arch Street, Lancaster, Pennsylvania.

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"THE SITUATION"

As Seen Across an Executive's Desk

October 17, 1939

THE PAST month in the textile industry has been probably the most exciting one in the past 20 years. This, of course, was due to the war in Europe—and yet this war is very different in its effects on the textile outlook compared with the past war.

The Two Wars Compared

During the last World War business in America was at a complete standstill for quite some time. Actually a period of complete depression existed. It was hard for work to be had. Building was at a standstill, manufacturing was in a slump, cotton hit such low-price levels that in desperation, the starving South started the "Buy-a-bale" movement in order to unload the surplus. Today all is different, probably because for the past two or three years the constant threat of war has done something to cushion the markets and instead of being a complete knock-out to business and industry, this war has acted as a decided stimulant and all business activity is up at least 20 per cent above last year.

The war boom in textiles has been phenomenal during the past 30 days. We have this record. Worth Street has known the busiest time in its history and prices are shooting up on every cotton item. This, of course, opens the door to the most dangerous situation which could possibly face our industry: the psychological effect of feeling that this war boom is a normal condition. That manufacturers of cotton goods must remember that it is abnormal; that it is more than apt to be temporary and that it is extremely unhealthy, is the most important thing to remember at this time. Every action of their business schedules should be governed by those three points. The most dangerous of all will be the adding of additional shifts and other productive machinery or other increased production setups. Some of this is already apparent and a growth of this thought would upset the only probable profit period we have had in many years.

While we do not believe in regimentation and we do believe that the individual should operate his business as he sees fit, we think it is unspeakable that an individual should see fit to operate his business to the detriment of the industry as a whole.

The Export Market?

We have heard a great deal about the great export market which this war will create for American mills. At this time, such a market is fallacious, as records actually show that although inquiries are coming in from South America and other countries foreign countries that these inquiries are simply hedges as the customers prepare for a future shortage. They are not faced with a shortage today.

England is still delivering goods to her customers in South America and Latin America, and they have notified their customers that they intend to continue to do so.

During the last war the great textile boom was not the result of export business, although many people persisted in claiming this to be true. But, it actually was the result of buying at home, as the Government endeavored to build up tremendous surpluses of all types of goods preparatory to entering the war. It is really much less likely to happen today than most people realize, for the American people do not want to be pushed into war and the Government will not commit itself to a strong buying policy of war supplies until it is positively necessary.

The many millions of yards of cotton goods sold in Worth Street were sold on a speculative basis, and the deliveries are not going into finished goods but are going on shelves of warehouses and will act as dams later on.

Activity in all of these markets of raw and finished cotton has slackened considerably within the past two weeks. The sales of print cloth goods fell considerably below current production and prices have leveled out until they are actually firm in tone. While sales are actually running ahead of last year, the orgy is over and it looks as if we are settled down to a long winter's nap.

If the war should suddenly end, or if it continues as it has begun more in the nature of a diplomatic struggle than anything else, in all probability spring business will be forgotten as the sales made last month are slowly liquidated from our books.

One new and rather serious threat created by war psychology is that our planners in Washington are understood to be secretly seeking to use this situation as an excuse for Federal control of prices and production. They hope to create a demand for special control programs and are shaping up many schemes. The strongest movement of course, is in the price field. This is a concrete result of profiteering from the last war and may mean a revival of a plan which would establish production control through tax credits to those who stay in the groove of Federally-fixed production schedules.

32½ Cents Is Here

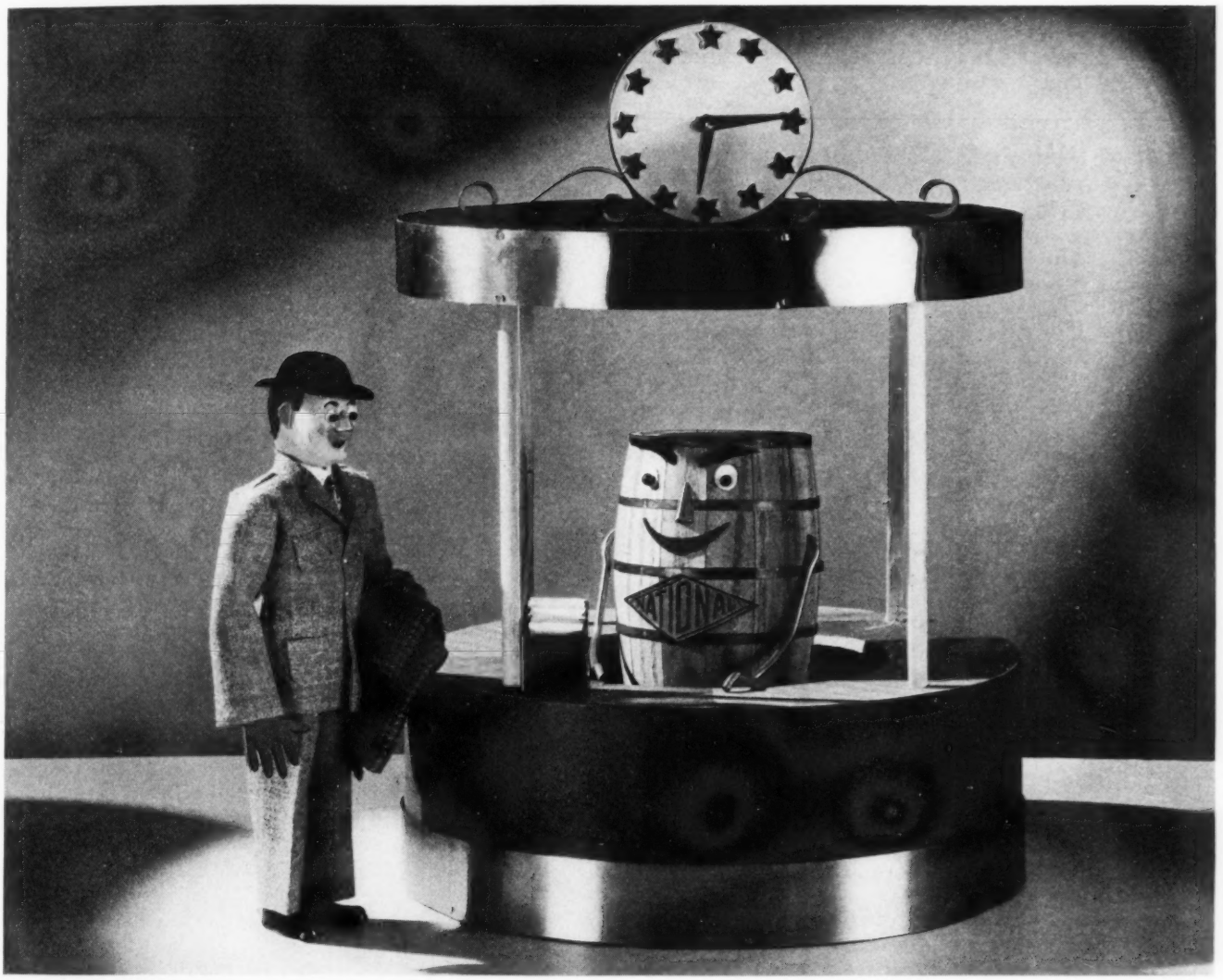
This month marks the transition from the minimum 25 cents an hour pay for textile employees to 32½ cents an hour under the ruling of the wage-hour administrator. Southern mills are adjusting their pay rolls to meet this new situation. Those marginal plants (by marginal in this case we mean those who pay just what the law demands and no more) which will be forced to raise wages from the minimum of 25 to 32½ cents have, in many cases, fully overlooked, in their price quotations, this certain increase. Now it will be a struggle whether or not they will be able to collect increased charges on their contracts, although it is reasonable to assume that the majority will have a try at it.

It will be interesting to note at the expiration of another six months whether the South will have graduated from its status of Economic Problem No. 1, due to increased payroll of employees, or whether it will be deeper ensconced in that position due to closing mills. This is one question which time will have to answer.

The Learner Hearings

One other point of interest concerning the Wage-Hour bill is the recent hearing held in Washington on learners. The textile industry asked 25 cents as a minimum wage for learners, with a period of eight weeks apprenticeship and privilege of employing 5 per cent learners in the plants. In a few small plants the learner group be limited to five persons. The question was ably handled and it is hoped the Administrator will issue a ruling allowing this privilege and that blanket certification by each mill will be allowed instead of the now required individual certification of each person. This is a privilege which the industry needs and it is one which they must be very careful not to abuse, as abuses along this line are among those causes which lay behind the enactment of the wage-hour bill. The disgraceful treatment of employees listed under learners by the sweat shops in the North during the NRA days is something which will never be lived down.

Today's news brings us information that Elmer Andrews resignation in fa-



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On textile warp sizing, printing, and finishing problems, mill men are rapidly learning that NATIONAL *has the right answers!*

National Starch Products Inc.

820 GREENWICH ST., NEW YORK—CHICAGO—PHILADELPHIA—BOSTON—SAN FRANCISCO—*and All Principal Cities*

vor of Col. Philip Fleming as Wage-Hour Administrator has been accepted by the White House. It simply means that "We're in the Army now."

Problems with Cotton Bagging

The raw cotton crop is now being harvested and is near the close of the season. There is a very large crop in the central belt and a tremendous hold-over in government stocks. Most of the mills have contracted for their cotton for a year ahead and now shippers find that the harvest does not contain some of the grades and staples they have sold. For instance, there is an alarming shortage of 1-5/32 inch and 1-3/16 inch. This may mean a switch to irrigated cottons.

There is a concentrated long position in nearby options and this further complicates the situation on carrying stocks. Over 7,000,000 bales of cotton have already been ginned and a general holding movement is felt throughout the belt.

It is interesting to see that considerable cotton is being wrapped in cotton bagging, which program is now in its second years of operation under the auspices of the Cotton-Textile Institute. The Government subsidized cotton bale covering and it is understood that about one-fourth of the crop in the central belt is being wrapped in cotton. However, some real difficulties have arisen. A tare allowance of 7½ pounds, was agreed to by many mills and that as well as other things have created considerable confusion. The main points in question, according to The Cotton-Textile Institute, are:

1. Despite the assumption of a 21 pound average tare, in actual practice there is a considerable divergence, some bales being covered with sugar bagging or light burlap, with a tare of 17 or 18 pounds and, at the other extreme, many bales covered with the heaviest jute material, plus many patches, and reaching a tare of 24 or 25 pounds. Apparently these wide divergencies do not usually cancel out in any particular transaction or shipment. Of course, the fault here lies in the present system of gross weight trading rather than the one being proposed.

2. In the beginning of the program and since, a small but important minority of cotton buyers declined to participate.

3. Certain shippers, likewise, indicated indifference or reluctance relative to the tare allowance for cotton bagging.

4. Certain shippers declined to make allowances to the producers and in consequence failed to invoice additional charges to the mills. Likewise, in certain instances, mills either accepted without question shipments of cotton-wrapped cotton bearing no extra charge or resisted the payment of the charge, if made.

5. This combination of circumstances quickly created in the minds of many other mills and shippers, who were disposed to go along with the program, the fear of competitive disadvantage which would naturally arise from the lack of uniform practice in making the allowance. In addition to this fear was the resentment over the failure of the farmers to receive their additional compensation in all cases.

6. It was reported that in some instances, sellers of cotton have put a highly excessive number of patches on cotton-covered bales for the purpose of bringing the tare up to the jute standard. Undoubtdly this practice was resorted to as a precaution against possible failure to collect the tare allowance from subsequent buyers.

7. As to the physical qualities of the cotton bagging, there is considerable conflict of evidence. Most mills take a highly favorable attitude but others have reported dissatisfaction in those instances where cotton was subjected to excessive weather exposure of severe handling conditions. It has also been demonstrated that stencil inks should not be used on cotton bagging. This ink is now used by some ginners and shippers and permeates the cotton bagging and needlessly discolors unreasonable amounts of cotton. This is a practice which is wasteful and unnecessary. It is being brought to the attention of ginners and shippers in the hope that they will substitute another method of bale marking.

Thme real answer to the question of cotton bagging for cotton bales lies in the adoption of a net-weight trading program. This program is strongly recommended in a bulletin published by the Department of Agriculture. Some of the real merits of net and gross weight system are outlined and concludes that the former is more desirable. It agrees that net-weight trading will result in a wide saving.

The principal direct advantage of net-weight trading, it is pointed out, "would accrue to cotton growers and consumers of cotton goods." Savings in marketing costs, it is said, "would probably be divided" between these two groups. Savings also would be realized by marketing agencies and cotton manufacturers.

Net-weight trading would necessitate the sale and purchase of cotton on the weight of the lint contained within a bale. It would provide for standard tare weights for each type of bagging used for American cotton and thus eliminate the "guesswork" and costly stripping of bales as now practiced under the gross weight method of trading.

Tare standardization should entail no greater costs for bagging, ties, and other materials, the report states. Furthermore, by standardizing bale pattern sizes and strength as well as weights, American cotton could be better protected than under existing packaging practices. "This greater uniformity and more adequate protection of bales," it is pointed out, "would improve the appearance of American bales and make them more competitive in foreign markets with foreign bales which now present a much more attractive appearance."

Additional savings could be effected by eliminating much of the weight now carried in the heavy tare on American bales. Transportation charges are now being paid on the extra weight of materials used. Furthermore, many importing countries base import duties and special taxes on all imported cotton on gross weight. Most foreign growths now carry only about half as much tare per 500-pound bales as does our American cotton. On this basis the import duties and taxes paid on the tare on a bale of American cotton reflect a distinct disadvantage to American growers. The service contends that standardized light-weight bale patterns made of cotton, jute or other materials can remove this disadvantage without sacrificing the essential element of strength.

PUBLISHER'S STATEMENT

of the ownership, management, circulation, etc., required by the act of Congress of March 3, 1933, of COTTON, published monthly at Dalton, Ga., for October 1st, 1939.

State of Georgia, County of Fulton.

Before me, a Notary Public in and for the State and County aforesaid, personally appeared Richard P. Smith who, having been duly sworn according to law, deposes and says that he is the Business Manager of COTTON, and that the following is to the best of his knowledge and belief, a true statement for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the act of March 3, 1933, embodied in Section 411, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, W. R. C. Smith Publishing Co., Atlanta, Ga.; Editor, R. W. Philip, Atlanta, Ga.; Business Manager, Richard P. Smith, Atlanta, Ga.

2. That the owners are: W. R. C. Smith Publishing Co., Atlanta, Ga.; W. R. C. Smith, Atlanta, Ga.; W. J. Rooke, Atlanta, Ga.; W. S. Cushion, Cleveland, Ohio; O. A. Sharpless, Atlanta, Ga.; J. C. Martin, Atlanta, Ga.; T. W. McAllister, Atlanta, Ga.; E. W. O'Brien, Atlanta, Ga.; J. C. Cook, Chicago, Ill.; R. P. Smith, Atlanta, Ga.

3. That the known bondholders, mortgagees and other security holders, owning or holding 1 per cent or more of total amount of bonds, mortgages, or any other security holders are: None.

4. That the two paragraphs next above giving the names of the owners, stockholders and security holders if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholders or security holders appear upon the books of the company as trustees or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stock holders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bonafide owner and this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

RICHARD P. SMITH, Bus. Mgr.

Sworn to and subscribed before me this 26th day of September, 1939.

E. L. PHILPOT, Notary Public.

My commission expires February 7, 1943.

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Here indeed is a profit-producing device — a compact type Combination Finnell that sets new standards of fast, efficient floor care for the textile industry . . . substantially reducing maintenance costs.

Speedily, thoroughly, and with surprisingly little effort, this Finnell does a complete job of cleaning textile floors. Operates as efficiently in narrow spinning machine lanes, weave room alleys, and otherwise congested places, as in large open areas.

This Combination Finnell automatically distributes the correct amount of powder, scrubs, removes dirty water and deposits, rinses, and dries the floor.

Just one of 43 sizes and types offered by Finnell for low-cost maintenance of clean, sanitary floors.

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on your own floors, under actual working conditions. No obligation. Phone nearest Finnell branch, or write Finnell System, Inc., 1311 East Street, Elkhart, Indiana.

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Pioneers and Specialists in **FLOOR MAINTENANCE EQUIPMENT**

New Textile Publications of Interest

Sonoco Products Company, Hartsville, S. C. An interestingly written 64-page booklet introducing the personnel of the company to the public and illustrating the type of products the company manufactures.

Cameron Machine Company, 61 Poplar St., Brooklyn, N. Y. A folder entitled "A Comparison of Slitting and Winding Methods", containing helpful hints for plants having to do this type of work.

Acme Steel Company, 2840 Archer Ave., Chicago, Ill. An illustrated booklet to assist exporters in locating devices and methods of reinforcing all types of export packs; devoted to various types of strapping.

Allis-Chalmers Mfg. Co., Milwaukee, Wis. B-6029, a new 28-page booklet containing a vast amount of buyers' data never before available on the company's motors and drives.

Quigley Company, Inc., 56 W. 45th St., New York City. Folder on Annite, the all-purpose cleanser; said to be effective in any water, hard or soft—hot or cold.

Walter Kidde & Co., Bloomfield, N. J. Booklet on industrial fire fighting entitled "Don't Play with Fire". Describes the way in which carbon dioxide and snow-and-gas smothers Class B and C fires—involving flammable liquids and electrical equipment respectively.

Best Universal Lock Company, Inc., Indianapolis, Ind. Folder giving the various features of the Best lock, with the interchangeable core.

Hatch Textile Research, Inc., 25 E. 26th St., New York City. New price list for various textile testing.

American Machine and Metals, Inc.; DeBothezat Ventilating Equipment Division, East Moline, Ill. Catalog including more than 200 axial flow pressure fans in the various sizes.

The Permutit Company, 330 W. 42nd St., New York City. Literature describing the company's electro chemical feed for apportioning chemicals in wet form at a constant or variable rate.

Detergent Products Corporation, Atlanta, Ga. Literature descriptive of Thaumaphos, the company's name for its grade of Tetra Sodium Pyrophosphate.

Crane Company, 836 S. Michigan Ave., Chicago, Ill. Descriptive material on globe valves and gate valves and how to pick the right one for the purpose it must serve.

Venango Engineering Company, G and Lycoming Sts., Philadelphia, Pa. Folder descriptive of the new all stainless steel package dyeing machine, with vertical spindles.

Stephens-Adamson Mfg. Co., Aurora, Ill. Illustrated folder descriptive of the company's car pullers, hoists and winches.

Dronsfield Brothers, Ltd., Oldham, England. "Carding Chats", Numbers one and two, giving some helpful pointers on carding practice and card grinding, presented in an attractive and readable manner. (U. S. Agents, John Hetherington & Sons, Inc., 72 Lincoln St., Boston, Mass.)

The Louis Allis Company, Milwaukee, Wis. Bulletin No. 611, descriptive of the new Adjusto-Spede motor, an entirely new principle in alternating current adjustable speed motors.

The American Pulley Company, Philadelphia, Pa. Four new profusely illustrated catalogs, descriptive of the company's hand trucks, motor bases, steel pulleys, and Sprucolite pulleys.

Rohm & Haas Company, Inc., 222 W. Washington Square Philadelphia, Pa. Literature on Rhoplex and RHonite resins, with suggested formulas for modernized finishes.

The Brown Instrument Company, Philadelphia, Pa. Colorful booklet describing a new line of thermometers and pressure gauges, of vapor-actuated, gas-actuated and mercury-actuated types.

Flexible Steel Lacing Company, 4607-31 Lexington St., Chicago, Ill. Bulletin No. V-200 on Alligator V-belt fasteners for B, C and D section cross woven fabric V-belts.

What the Southern Mills are Doing

Pacific Mills, Lyman, S. C., will construct two warehouse extensions at a cost of about $100,000; C. M. Guest & Son, Anderson, have been awarded the contract.

Tennessee Eastman Corporation, Kingsport, Tenn., has almost completed the addition to the plant, which enables the company to increase its production of Teca acetate staple fiber.

Drayton Mills, of Spartanburg, S. C., will construct a new opening room and a new office building.

Fairforest Finishing Company, Spartanburg, S. C., will make an addition to its present plant, in which the company's offices and dyeing equipment wil be located.

The Selma Manufacturing Company, Montgomery, Ala., has been re-opened.

Calhoun Mill, Calhoun Falls, S. C., has built a community house at a cost of $7,000.

Anchor Mills, Huntersville, N. C., has installed new dyeing and drying equipment, and improvements have been made to the village homes.

Burlington Mills Corporation is erecting an addition to its rayon weaving plant at Central Falls, N. C. It is understood that upon completion 300 looms will be installed.

Cleveland Cloth Mill, Shelby, N. C., has completed the sale of all homes in its mill village to the employees of the company.

Aponaux Manufacturing Company, West Point, Miss., has recently reopened.

Henry River (N. C.) Mills will construct an addition to the present plant.

Mutual Mill, West Gastonia, N. C., has sold all of the village homes to the employees.

William Carter Company, Barnesville, Ga., is making an addition to the finishing department, which will provide 6,000 square feet of floor space. The cost of construction, including some additional equipment, is about $25,000.

Carter Fabrics Corporation, Greensboro, N. C., according to reports, is planning to erect a subsidiary unit at South Boston, Va. It is understood that a modern building will be erected, which will house 500 Draper looms, which will make plain rayon goods.

Scotland Sheeting Mills, Inc., Laurinburg, N. C., have been granted a charter to manufacture cotton yarns and cloth. The incorporators are Edwin Morgan, H. M. Jones and J. F. McNair, Jr., all of Laurinburg. It is understood that the new company will use buildings that are a part of the Waverly Mills, Inc., at Laurinburg.

Robeson Textiles, Inc., St. Pauls, N. C., has been granted a charter to manufacture yarns and textile fabrics. This concern is a reorganized corporation composed of the bondholders for the bankrupt St. Pauls Cotton Mill Company.

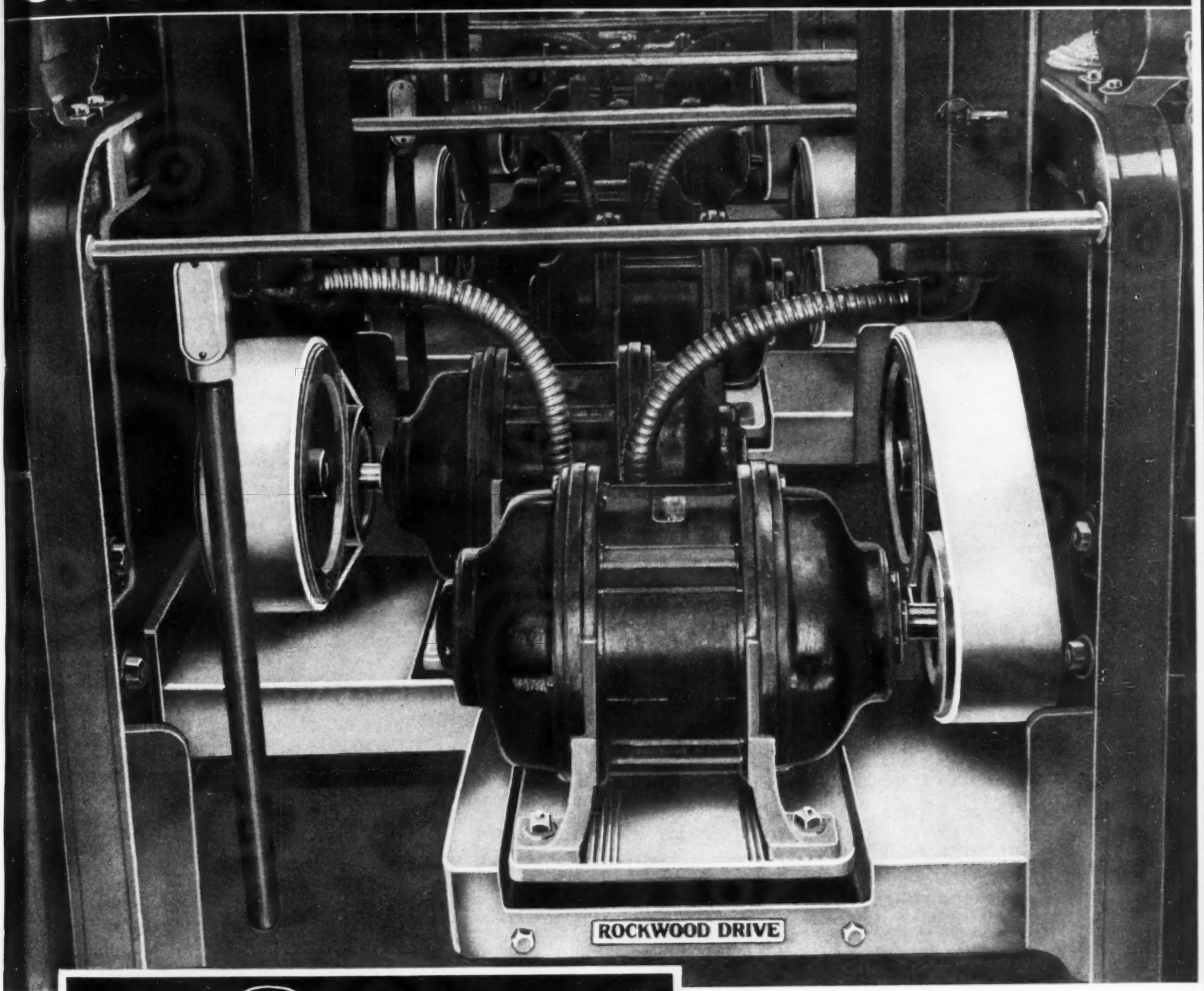
Appleton Company, Anderson, S. C., is undergoing a modernization program which will require several years to complete and which will represent an expenditure of about $1,000,000. New Model X looms are being installed in the weaving department.

Springstein Plant, Springs Cotton Mills, Chester, S. C., will construct an addition to the spinning department, where additional cards will be housed. 50 new mill houses are to be erected at the Eureka Plant of these mills.

Inman (S. C.) Mills will erect an addition to the plant, which will house a new cloth room. The addition will be 172x90 feet of brick, steel and glass construction. This plant is now manufacturing a line of fancy goods.

Bladenboro (N. C.) Mills have installed a Borne Scrymser cotton oil spraying system.

SAMOSET COTTON MILLS Chose ROCKWOOD DRIVES



ROCKWOOD PIVOTED MOTOR DRIVE

Long draft spinning, the use of larger packages, higher spindle speeds and faster weaving, all result in more and better production for less cost. ROCKWOOD has developed Pivoted Motor Drives for spinning and twisting frames and for looms that match these improvements. If you have a drive problem write us.

Leading cotton mills use Rockwood pivoted-motor Drives

when "modernizing" for more and better production

If you want drives that start their machines quickly and smoothly, that waste almost no power, *that keep their machines relentlessly up to speed,* and that require almost no maintenance THEN DO AS OTHER LEADING MILLS HAVE DONE—PUT IN ROCKWOOD pivoted-motor DRIVES.

Because Rockwood Drives are better able to maintain their driven machine speeds, they assure MORE PRODUCTION AND A BETTER QUALITY to nearly all cotton mill machinery. That has been the experience of other important users, and we believe it will be the same for you.

ROCKWOOD engineers are familiar with textile drive problems, and their services are available, without obligation, to mills considering a "modernization" program. Ask your nearest ROCKWOOD Distributor, or send full information to us at Indianapolis. ROCKWOOD *Drives must result in better and more consistent machine production or we don't want you to keep them.*

ROCKWOOD MANUFACTURING CO. INDIANAPOLIS, IND.

COMMENT on the Cotton Market

New Orleans,
October 19, 1939.

ALL THINGS considered, the cotton market held comparatively steady during the past month, for while the demand for goods was less urgent, there continued a good inquiry for the raw material which is reflected in a freer movement for export. Sustaining features were the Government's October smaller U. S. cotton crop estimate and the possibility of a Government loan on this year's cotton crop. Debate on neutrality legislation, and peace talk attracted some attention, sufficient to retard trading somewhat, some operators being disposed to await further developments before entering into new commitments.

The Government forecast of a crop of 11,928,000 bales compared with the indicated September production forecast of 12,380,000 bales. The indicated yield per acre was reduced to 235.7 pounds against 244.7 in September and 235.8 last season.

Condition of the crop as of October 1 was 68 per cent of normal as compared with 70 in September and 66 on October 1, 1938.

Ginnings to October 1 were placed at 6,687,000 bales as compared with 6,577,000 ginned to corresponding date last season.

The decrease in indicated production was attributed to losses in most States, with Oklahoma and Texas suffering from hot, dry weather causing premature opening and shedding. The Carolinas gained moderately. Louisiana about held its own. The irrigated areas west of Texas had minor increases.

Compared with last season there is improvement in exports of raw cotton from the United States. To October 13, shipments totaled 1,197,000 bales against 869,000 bales to the same date last season, Great Britain showing the largest gain—426,000 bales versus 101,000. France shows a small decrease. Shipments to Germany totaled only 40,000 against 158,000 bales.

Reports are to effect that there continues a good demand from the mills, and it appears that buying from abroad has not been as poor as reported. Offerings have been free and heavy in almost all sections where the harvest has not been completed, but were apparently cared for.

Another aid to the export situation was noted in a recent Washington report that a $5,000,000 revolving fund had been established in a corporation to aid export of cotton for domestic use to those countries which are not belligerent. It is expected this help will be particularly helpful in those cases where exchange is not immediately available.

The general business outlook remains favorable with the major industries, steel, textiles, etc., active. Aside from any further business stimulus which might be derived from possible changes in the Neutrality Act and diversion of foreign commerce from warring countries to the United States, the autumn upswing in business has taken off these encouraging conditions.

Some reports indicate recovery has already progressed to a point where further gains would bring striking increases in new jobs, because heretofore the advance has meant mainly lengthening of working hours for those already on the pay rol's.

WORLD'S VISIBLE SUPPLY OF COTTON

American—October 13— Bales—	This Year	Last Year
Stock at U. S. Ports	2,838,000	3,097,000
Stock at 102 interior towns	4,754,000	4,396,000
Afloat to and at ports of Europe	(*)	1,249,000
Afloat to and at ports of Orient	131,000	150,000
Totals	(*)	8,892,000
Totals of other kinds	(*)	2,050,000
Total of all kinds	(*)	10,942,000

(*) Not available account of war conditions.

CENSUS REPORT OCTOBER 14, 1939

United States— Bales—	This season	Last season
Consumption of lint, September, cotton-growing states	535,000	457,000
Consumption of lint, September, New England states	72,000	61,000
Consumption of lint, September, All other states	18,000	15,000
Consumption of lint, September, United States	625,000	533,000
Consumption of lint, 2 months, cotton growing states	1,066,000	927,000
Consumption of lint, 2 months, New England states	150,000	134,000
Consumption of lint, 2 months, all other States	37,000	32,000
Consumption of lint, 2 months, United States	1,253,000	1,093,000
Mill Stocks, September 30	871,000	1,107,000
Stock in public storage and warehouses, Sept. 30	14,176,000	13,034,000
Stock in mills, public stg. and whs. Sept. 30	15,047,000	14,141,000
Stock in mills, public stg. and whs. Aug. 31.	12,459,000	10,884,000
Active spindles in cotton growing states, September	16,659,000	16,814,000
Active spindles in New England states, September	4,958,000	4,753,000
Active spindles in all other states, September	615,000	616,000
Active spindles in United States, September	22,232,000	22,183,000
Active spindles in United States, August	22,012,000	22,158,000

AMERICAN COTTON

August 1 to October 13— Bales—	This season	Last season
Brought into sight (marketed)	4,968,000	4,742,000
Exports from U. S., including Canada	1,197,000	869,000
Spinners takings, North and Canada	310,000	280,000
Spinners takings, South	1,381,000	1,155,000
Spinners takings, Foreign, excl. of Canada and Orient	(*)	595,000
Spinners takings, Orient	96,000	162,000
Spinners takings, World total	(*)	2,192,000

(*) Not available account of war.

Now, After Ten Years

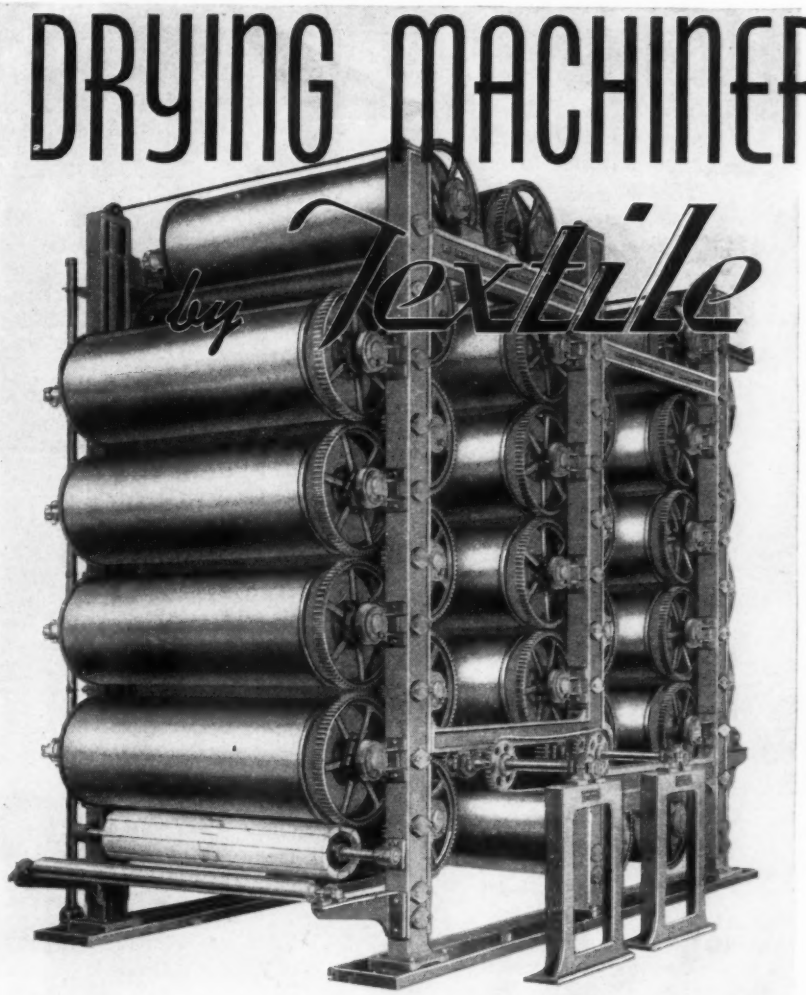
(Continued from page 50.)

northern branch of the industry has had a perfectly satisfying taste of life under these conditions, and many of these northern textile plants have moved into the South to get away from the troubles that beset them at home. It is charged that some of these concerns are just bunches of cheap grafters who hope to profit by lower wage levels in their new locations. It is doubtful if, under the present national wage laws, there would be enough difference in wages alone to tempt a concern to junk a building and go to the expense of moving its whole plant to a new section of the country. There is generally much more to it than wages. Behind most of these moves there is a story of constant squabbling; obstructionist tactics on the part of the help; sabotaging of the equipment, and all of the other practices so commonly employed to put the screws on an employer.

The South has been fortunate in avoiding most of this sort of trouble. There has been enough of it here and there to prove that it can happen. A better understanding of life under these conditions should strengthen southern manufacturers and employees in their resolve to keep free of them.

Modernized!

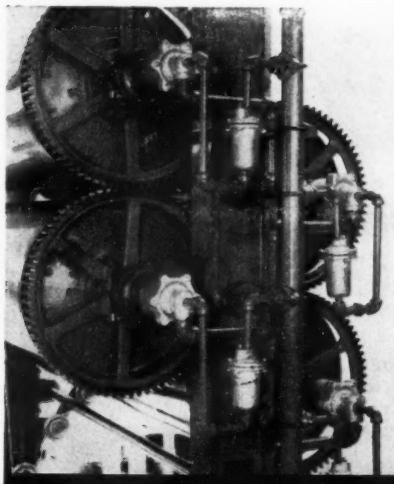
CYLINDER DRYING MACHINERY



• The latest developments and improvements in design on Cylinder Drying Equipment are shown on the machine illustrated. Particular attention is called to the fact that the new features incorporated into the construction of Textile's Modernized Drying Equipment are all in accordance with expansion and re-vamping programs of many outstanding Southern and Eastern Finishing Plants.

Close-up view below

showing Drying Cylinders equipped with Textile's Self Aligning Roller Bearing Housings and other features including individual Syphons, Johnson Joints, Traps and Strainers controlling the removal of condensate. Traps furnished according to the preference or requirements of the mill.



• Cylinders offered consist of Sheet Copper with single brazed seams, rolled and planished to a hard, smooth surface — Seamless Drawn Copper Tube construction — Special Fabricated Stainless Steel with single welded precision ground seams — Standard Tinned Iron.

• Textile's Drying Equipment includes Upright and Horizontal Designs, built with any required number of cylinders, face dimensions up to 150 inches.

ADDRESS ALL INQUIRIES TO DEPT. C

The Textile-Finishing Machinery Co.

New York Office
50 Church St.

Southern Office
Johnston Bldg., Charlotte, N. C.

Providence, R. I.

New Textile Equipment and Materials

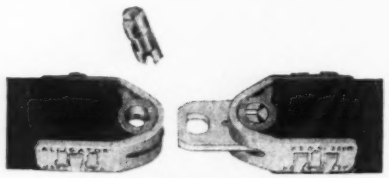
New Type Car Puller

Stephens-Adamson Mfg. Co., Aurora Ill., have announced the new No. 14 wire rope car puller with horizontal capstan. It has a capacity up to 6 fully loaded cars. It is specially designed with heavy duty clutch and flanged drum to operate with wire rope. The drum will accommodate 500 feet of ⅝-inch wire rope. The heavy duty clutch, operated by handwheel, disengages the drum to pay out rope.

◆

Fastener for V-Belts

Flexible Steel Lacing Co., 4607 Lexington Street, Chicago, has developed the V-belt fastener for "B", "C" and "D" section V-belts. The use of the fastener, however, is limited to the cross woven fabric core V-belts that are now



V-belt fastener

being built by some of the V-belt manufacturers and should not be applied to cord belts.

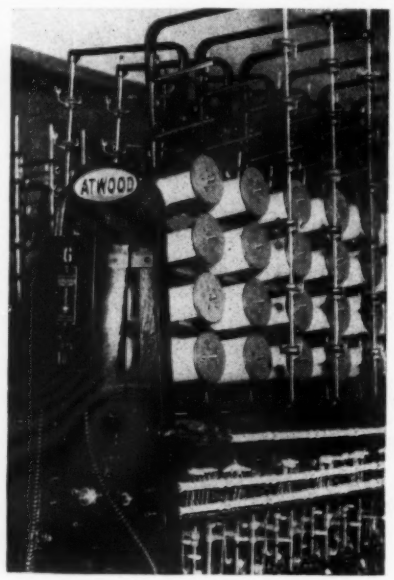
The company states that the use of V-belts in the past has been strictly limited to services where endless belts could be used. This eliminated many possible applications of V-belts for services where an endless belt could not be put on the sheaves without dismantling the drive. It is said, therefore, that the new Alligator V-belt fasteners considerably broaden the field of application for V-belt drives. With these fasteners it will be possible to install and maintain matched lengths of V-belts on multiple drives without the necessity of tearing down expensive installations. It will also be possible to make up a wide variety of multiple V-belt drives right from stock coils of belting.

◆

Atwood "5B" Over-End Delivery

The Atwood Machine Company, Stonington, Connecticut, is now equipping Atwood "5B" doubler twisters for over-end delivery of silk or rayon yarns for either bobbins or cones.

Many yarn producers have expressed a desire for an over-end delivery be-



Now with over-end delivery

cause the bobbins or cones remain stationary, higher thread speeds may be employed and a balanced feed maintained from each bobbin or cone. The Atwood "5B" over-end delivery is designed for extreme simplicity and ease of operation. Each end of yarn is under small but even tension. There is nothing to adjust or get out of order. Threading up is exceedingly easy. The position of the take-off permits ready replacement of bobbins. The over-end delivery is interchangeable with side delivery, if desired. Even one bobbin can use side delivery while the others are operating over-end. Because the bobbins do not revolve, there is, of course, no wear on bobbin holes. The decreased yarn tension greatly reduces breakage.

◆

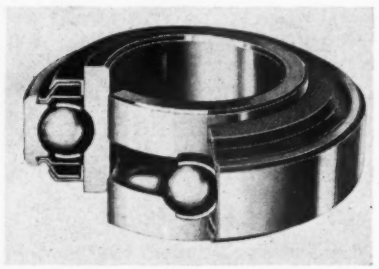
New Rayon Yarn

Imperial Rayon Corporation, Gloucester, N. J., has announced a new rayon yarn which is said to be tailor made for the girdle and corset trade. It is the result of an intensive study of the requirements of elastic weaves in which rubber yarn is incorporated. The new yarn is spun from a solution of which the dye is an integral part. The new product is said to have unusually high tenacity and more than ordinary elasticity.

◆

Sealed Bearing

The Fafnir Bearing Company, New Britain, Conn., has made commercially available a new seal design bearing known as the Mechani-Seal. This is an



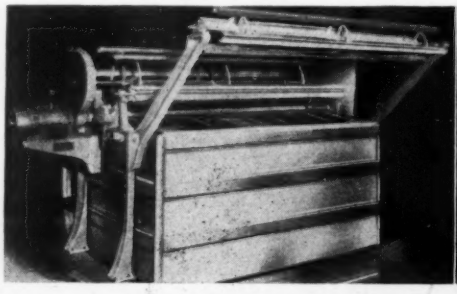
Sealed

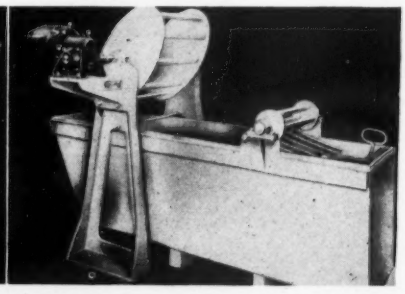
integral part of the bearing itself and provides a closure by actual test which is said to be most effective. It is obtainable in a number of different variations such as the single seal, double seal, seal and shield combinations, on either the radial or wide inner ring bearings.

◆

Bushing for Grinding Wheels

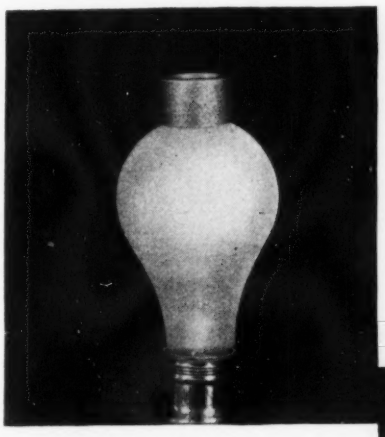
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J., has developed a new bushing for grinding wheels which is a resilient mounting for portable grinders. Tests made on the bushing, the V.D.B., show that it requires no changes in existing equipment, and increases the life of the grinding wheel.



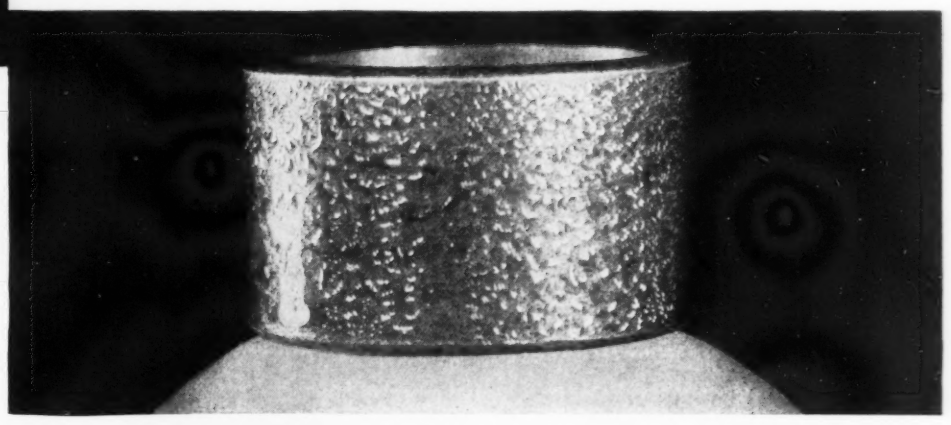


Left, the new reel dyeing machine for wool and cotton fabrics, of all stainless steel construction. The tub of all welded construction is ruggedly braced; equipped with removable perforated dye partition, 6-inch outlets and stainless steel perforated steam pipes. The cast iron side frames are built free of dye tub. Drive is by fully enclosed gear reduction motor, through enclosed cut gears.

Right, Type "S" all stainless steel dye beck for samples and small lots. All welded stainless steel tub, with removable perforated dye partition, 4-inch outlet and welded steam pipes. Available in variety of sizes. Both machines manufactured by H. W. Butterworth Sons Co., Philadelphia, Pa.



a NEW *development for* TEXTILE MILLS



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SELF LUBRICATING

BEARING BRONZE

Patent Applied For

Here is a NEW bearing of exceptional interest to the TEXTILE industry. Containing up to 35% oil by volume, it provides the right amount of lubrication . . . in the right place . . . at the right time. The controlled structure of LEDALOYL — with its even arrangement of pores — provides a metered flow of oil to the shaft when in operation and a reabsorption of oil when the shaft is at rest. Thus you have the advantage of a protective film of oil without the danger of seepage onto goods in process.

Our exclusive process of pre-alloying certain basic materials, enables us to introduce lead as an integral part of the bearing. This valuable addition prevents scoring and provides the necessary conformability. Thus you are assured of smooth, *quiet* performance; of long bearing life.

Why not investigate the application of LEDALOYL in your mill? Complete details will be forwarded — entirely without obligation. Write today.

THE MOST COMPLETE SLEEVE BEARING SERVICE in the world

JOHNSON BRONZE COMPANY

Sleeve BEARING HEADQUARTERS

530 SOUTH MILL STREET • NEW CASTLE, PA.

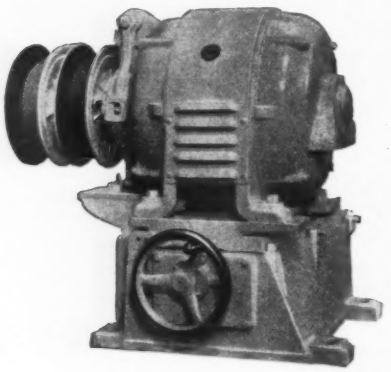
Ballasts for Fluorescent Mazda Lamps

General Electric Company, Schenectady, N. Y., has made available a new design of ballast for use with fluorescent Mazda lamps. The lamp starter or switch has been removed from the ballast, permitting it to be mounted easily in another part of the circuit and making it accessible from the outside of the fixture. Included in the changes are new high power-factor Tulamp ballast which make use of the split phase principle in which one lamp is ballasted by reactance only and the other lamp by reactance and capacitance in series.

◆

Motor Development

U. S. Electrical Motors, Inc., Los Angeles, Cal., have developed a multiple belt for variable speed drive motors. Speed changes on the unit are effected by turning the handwheel which shifts the motor on the base and this moves the yoke which actuates the pulleys. A new lubrication system provides a thorough method of greasing the pulley sliding fits. A hollow section of shaft is constructed through the pulleys and the grease is ejected through orifices from the hollow section of the shaft to the sliding surfaces. The belt may be tightened or loosened without shifting the entire base. This adjustment is made by working a setscrew which turns the eccentric bushing located at the pivot point of the shifting yoke arm.



◆

Controller

C. J. Tagliabue Mfg. Co., Park and Nostrand Aves., Brooklyn, N. Y., have developed a new Celectray indicating potentiometer controller, self-balancing type, which has many industrial applications for regulating temperature, hydrogen ion, etc. The instrument is designed to indicate temperature at all times on a 10-inch scale. The control point is adjusted by means of a knob. It utilizes a beam of light, a mirror galvanometer and a phototube, which eliminates mechanical design and permits unit construction, according to the company.

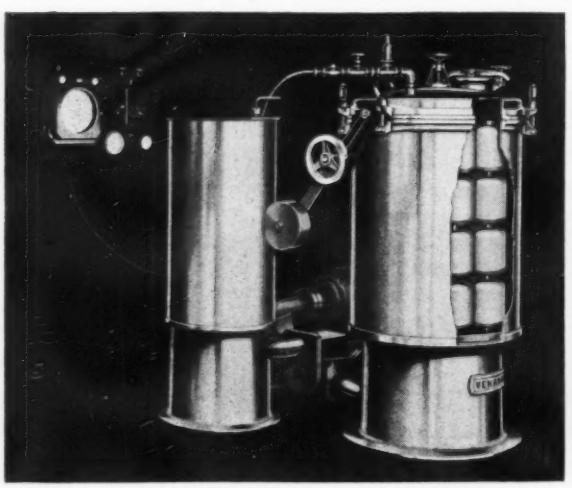
◆

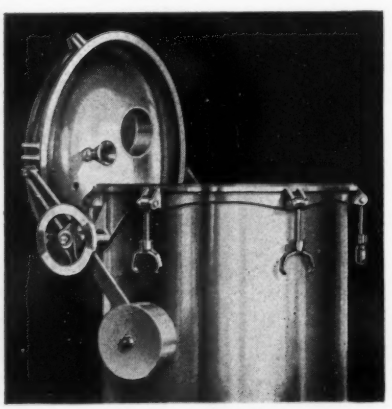
Adjusto-Spede Motor Incorporates New Principle

The Louis Allis Company, Milwaukee, Wis., has designed the Adjusto-Spede motor which is said to incorporate an entirely new principle in alternating current adjustable speed motors. It is a combination of an eddy current clutch and a standard constant speed ac. squirrel cage motor. There is no mechanical contact between the driving and driven members of the unit; the speed and torque variations are obtained by controlling the magnetic excitation of the clutch, thereby obtaining any desired slip. It has an unusually wide range of speed variation from zero to full speed at full load torque; the unit can be operated continually at low speeds without overheating; and remote control is available as standard at slight extra cost.

New Package Dyeing Machine

Venango Engineering Company, Philadelphia, has developed and put on the market a new stainless steel package yarn dyeing machine with important improvements and advantages. Chief of these improvements, the makers point out, is the unique method of controlling the reversal of dye liquor flow . . . a function of recognized prime importance in package dyeing practice. This is done pneumatically, and in the adoption of the pneumatic principle for their 4-way control transfer valve, Venango engineers claim to have achieved an extreme simplification of design which works far-reaching benefits. This valve is exceedingly compact, easy to operate, low in upkeep, and needful of little or no mechanical skill in its care. Instant flow reversal, accurate timing and positive control, which make uniform dyeing a certainty, are further claimed, as well as increased efficiency of dye flow through the packages, because pressure is transferred instantly and maintained without variation in either direction there being no appreciable lag between changes of flow. Another interesting new Venango development in this machine, is found in the design of the Dye Tank Cover. This cover, or lid of the machine, is mounted on a balanced hinge with a counterweight at the side which swings entirely free of the tank.





Left, the new package dyeing machine, the dye tank being cut away to show construction; right, close-up of tank cover design . . . . . .

THE NEW CATION-ACTIVE SOFTENER, GIVES AN EXTRA SOFT AND EXTRA DURABLE FINISH TO CELLULOSE FABRICS

Perhaps you discovered, back in school days, that the mutual attraction between the positive and the negative poles of a horseshoe magnet will draw iron filings into a semi-circle.

There is a similar attraction between Appramine-C solutions, which are cation-active or positively charged, and cellulose fabrics, which are ordinarily negatively charged in finishing. This natural affinity makes possible entirely new and distinctive finishes at a cost so low that many of the cheapest softeners can be economically replaced by Appramine-C.

Let us recommend an Appramine-C formula for your cellulose fabrics.

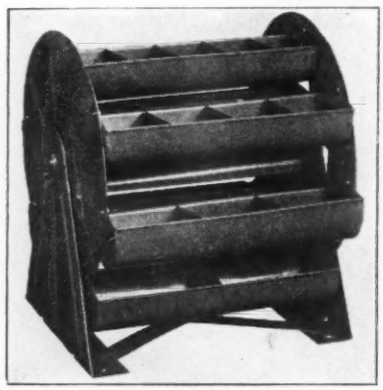
WARWICK CHEMICAL COMPANY
WEST WARWICK, R. I.

FACTORIES IN WEST WARWICK, R. I. AND ROCK HILL, S. C.
BRANCH OFFICES at Bethlehem, Pa.; Philadelphia, Pa.; Paterson, N. J.; Burlington, N. C.; Griffin, Ga.; 580 Fifth Ave., New York, N. Y.

IMPREGNOLE CORP., Sales Agents for IMPREGNOLE, 580 FIFTH AVE., NEW YORK, N. Y.

Parts Assorter

Diagraph-Bradley Stencil Machine Corp., St. Louis, Mo., has made available a container to hold various and sundry parts and supplies, called the Kari-All. It can be fastened in an up-



Kari-All

right position, from side wall, or from ceiling. Its eight troughs have over 30 different sized bins or quick selection of different or different sized items. It is 12 inches high, by 12 inches wide by 10 inches deep and weighs 8 pounds.

◆

Non-Glare High Intensity Lamp Fixture

Goodrich Electric Company, 2900 N. Oakley Ave., Chicago, Ill., has announced a new fixture for high intensity non-glare illumination, developed particularly for illuminating areas where precision operations require con-

Protecto Diffuser

tinuous good vision. Termed the Protecto diffuser, it is said to be radically different in design from any other combination reflector and globe fixture. The Protecto uses an unusually deep skirted reflector while the globe is much smaller in size and is concealed high above the bottom of the reflector skirt. Because the glass globe is not in the field of vision, it is possible to use a globe of very high transmission value for increased efficiency. It is available with the Diskonect hood, which permits instant release of reflector, globe and lamp as a complete unit, without using tools or disturbing the wiring.

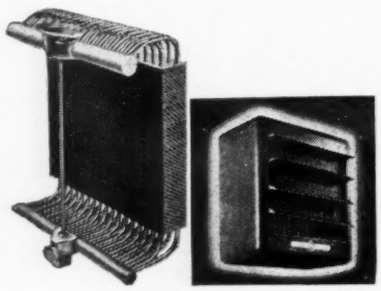
4-Burner Singer

Birch Brothers, Inc., 32 Kent St., Somerville, Mass., have recently introduced a 4-burner singeing machine for worsted and similar fabrics. It operates at 75 yards per minute and singes both sides of the fabric in one run, or all four burners may be operated on one side of the fabric. The burners are of the latest type and are adjustable for several widths of cloth. Each burner has its own adjusting valves and a single lever operated valve shuts off all burners instantaneously. The machine is equipped with water-cooled guide rolls, folder, adjustable tension, brushes for removing ash, and motor drive.

◆

Unit Heater Development

The Herman Nelson Corporation, Moline, Ill., has developed an interesting new feature which is said will prolong the life of the company's new propeller-fan type hiJet heater. This feature is a patented "stay tube", and has



Unit heater

been built into the heating element between the supply and return headers to allow any entrained moisture, which might otherwise be carried over into the heater, to drain directly from the supply header to the return header without entering the other tubes of the heating element. Another function of the stay tube is to maintain the proper relationship between the supply and return headers and thus leave the loops free to take care of only the expansion and contraction between individual tubes.

◆

Vise with Stand

The Ridge Tool Company, Elyria, Ohio, has added to its line of pipe tools a vise complete with 3-legged stand that offers many new convenience features. The legs are so constructed that they give perfect balance when set up, and prevent tipping. They are hinged at the tray, fold together compactly and fasten with a chain for convenient handling and carrying. The tray is wide and roomy. Tools can be hung on the raised rim as well in slots provided in the tray. Available in 2½-inch yoke and 4-inch chain patterns, made of strong malleable metal.

Channel Lubricated Roller Chain

Morse Chain Company, Ithaca, N. Y., has developed an interchangeable, channel lubricated roller chain, which conforms to American Standard dimensions and is completely interchangeable with all other standard roller chains. A particularly ingenious design retains the self lubricating features of the chain. In this round-pin roller chain, diagonal channels are rolled into the stock from which the bushing is formed. When the joint is assembled, these channels appear as spiral grooves and extend through the side plates of the bushing link. Oil on the rollers quickly finds its way to the bushing surfaces. The channels act not only as reservoirs but as paths for the flow of oil through the side plates and down to the pins, where the lubricant is seized and spread by capillary action over the entire contact surfaces of pins and bushings. Rollers are hardened and ground. Single, double, triple, and quadruple widths, all standard pitches and standard stock attachments are available in this new chain.

◆

RHotex A-20

Rohm & Haas Company, 222 W. Washington Square, Philadelphia, Pa., has announced RHotex A-20, a new synthetic gum. It is the sodium salt of a polymerized resin acid in an aqueous solution. The product is outstanding for its unusually high viscosity and its complete solubility in water. While readily miscible with acid, alkali, or salt solutions, it is not miscible with organic solvents. When deposited from an aqueous solution, it has excellent film forming qualities, it is said. It also has good emulsifying and dispersing properties. It is for use wherever natural gums are employed.

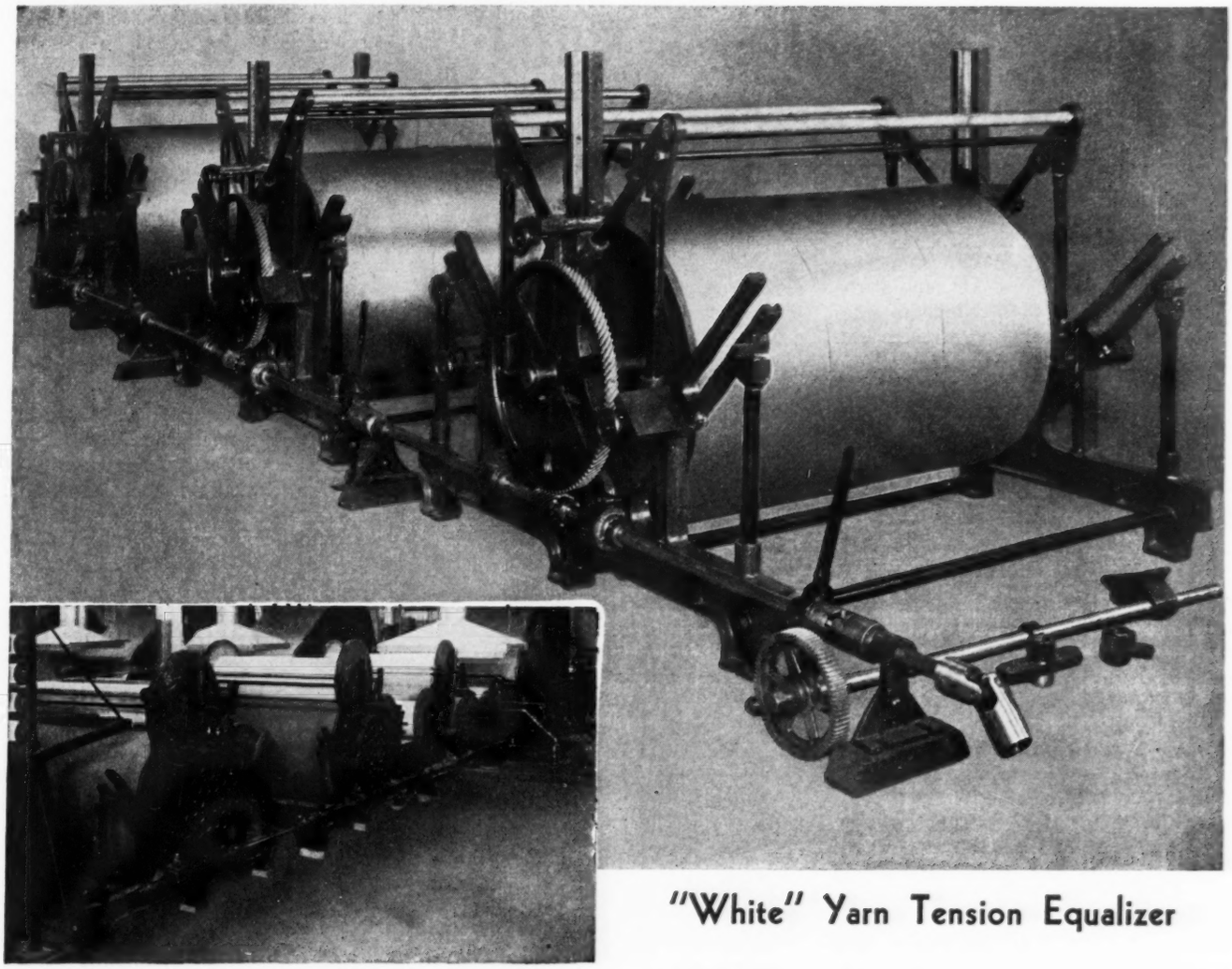
◆

Delayed-Action Mercury Switches

General Electric Company, Lamp Department, Hoboken, N. J., has announced a new line of delayed-action mercury switches, available both in circuit-opening and circuit-closing types. An addition to the standard line of Kon-nec-tor mercury switches, these units may be obtained with time-delay intervals of from ½ to 15 seconds for circuit-opening, and from ½ to 10 seconds for circuit-closing. They may be operated either mechanically by means of a lever or cam action, or electrically by means of a solenoid. These delayed-action switches are hermetically sealed in glass and are ideally adapted to use in moist or corrosive atmosphere.

◆

Greensboro (N. C.) Loom Reed Company is constructing an addition to the chromium plating department.



"White" Yarn Tension Equalizer

The Answer To Your Slasher Creel Problems!

A positively driven slasher creel that removes the yarn from section beams and delivers it to the sizing vat with or without tension as desired. Each unit is capable of handling three beams, and as many units as are desired may be coupled together to give the required beam capacity. Each beam is in contact with the positive driven equalizing drum, and when slasher is running, the same amount of warp yarn is removed from each beam regardless of the diameter of the warp roll. The yarn is removed without tension or strain, practically eliminating breakage and loose ends. Beams having the same amount of warp at start of set will all empty at the same time, cutting the waste to a minimum. It is the answer to your creel problems.

We also manufacture special equipment that enables a slasher operator to regulate the warp tension during the slashing process. When used in conjunction with the "White" Yarn Tension Equalizer, an absolute control of warp tension is secured. Regulation is sensitive and easily adjusted.

Also manufacturers of loom beams, West Point Energy Loom Drives, cloth room machinery, textile machinery parts and gears, special textile machinery.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

Berlinghof Represents American MonoRail in the Carolinas

The American MonoRail Company, Cleveland, Ohio, has announced the transfer of R. G. Berlinghof, sales engineer, from the company's general

Mr. Berlinghof

offices to Charlotte, N. C., as representative of the organization in the southern textile territory. The company manufactures conveying equipment and overhead cleaning equipment for textile plants; Mr. Berlinghof will represent the company on all of its lines in the two Carolinas, and on cleaning equipment in Virginia. His Charlotte headquarters are in the Commercial National Bank Bldg. Curran S. Easley, LaGrange, Ga., continues as the company's representative in the Georgia-Alabama-Tennessee territory.

◆

Southern Testing House Moves to Larger Quarters

The Southern Testing House of the United States Testing Company has been moved to its new headquarters at 1200 Arlington St., Greensboro, N. C. This move was made in order to better handle the increased volume of testing in the South.

◆

New Address for Cutler-Hammer

The New Orleans (La.) sales office and warehouse of Cutler-Hammer, Inc., has moved to new quarters at 732 Girod St. A complete line of stock is carried at the new warehouse. The office is in charge of P. C. Hutchison, who has had a wide and varied experience with the company.

◆

Grinnell's Growth Told in Booklet

An interesting and informative booklet has been prepared by the Grinnell Company, Inc., Providence, R. I., telling of the diversification of the company during the last two decades. Carried in the booklet are aerial photographs of all of the company's plants, and listed are offices throughout this country and foreign countries. The Grinnell personnel is also given, along with the length of service of the older employees. Typical companies served by Grinnell are listed and a full page of magazine covers is carried, showing the advertising mediums of the company.

◆

Kellogg Succeeds Yerkes as Link-Belt Treasurer

Richard W. Yerkes, who for a number of years has served the Link-Belt Company, 307 N. Michigan Ave., Chicago, as secretary-treasurer, has retir-

Harry E. Kellogg

Richard W. Yerkes

ed. He started with the company at Philadelphia in 1890, rising in rank until in 1923 he became secretary-treasurer, which position he has continued to hold. He will continue to serve as a member of the board of directors.

Harry E. Kellogg, who has been associated with Mr. Yerkes for the last 18 years, has been elected to succeed him as treasurer. F. V. MacArthur will serve as secretary.

◆

Unit to Produce New Chemical

According to a recent announcement from the Mathieson Alkali Works, Inc., 60 East 42nd St., New York City, reports from dyeing and finishing plants now operating the new Textone process have proven so favorable that plans have been completed and work started on the first commercial unit for the production of the new chemical. The new plant will manufacture sodium chlorite, one of the essential ingredients of Textone. The Textone output of the present pilot plant is currently being used by a few New England plants in single-operation scouring and bleaching processes, and as an adjunct to existing kier processes and by a number of other plants for experimental work pending the completion of the new commercial unit.

◆

A-C Public Relations Booklet

"We've Gone Places Together" is the keynote of a striking new public relations booklet issued by the Allis-Chalmers Mfg. Co., in honor of the 38 men who have been with the company for 50 years or more. In honoring the 50-year men in this unusual way, an effective answer is made by the company to the oft-heard wail that industry is through with a man when he reaches 40. As guests of the company at a dinner and celebration, each of the men was presented with the booklet and a gold watch, appropriately engraved.

◆

Ankeney in Cutler-Hammer Indianapolis Territory

H. E. Ankeney has been appointed to take charge of the Indianapolis territory for Cutler-Hammer, Inc., Milwaukee, Wis., manufacturers of electrical control instruments. Mr. Ankeney joined the company immediately after his graduation from Iowa State College. In recent years he has been associated with the Chicago office of the company. His headquarters will be at 307 N. Pennsylvania Ave., Indianapolis, Ind.

◆

Abbott Joins G & K

George L. Abbott has become associated with the Graton & Knight Com-

Mr. Abbott

pany, Worcester, Mass., as a director, vice-president and general sales manager. Mr. Abbott will pay particular attention to strengthening the company's mill supply dealer set up. Mr. Abbott formerly was president of the Philadelphia Power Club, an affiliate of the Power Transmission Council. At the present time he is vice-president of the American Leather Belting Association, vice-president of the Philadelphia Leather Belt Club, and chairman of the exhibitors committee of the American Supply and Machinery Manufacturing Association.

Are you having trouble with ordinary set-screws working loose . . . . . ?

More and more mills are finding the answer to this problem in equipping machines with

UNBRAKO

SELF-LOCKING HOLLOW SET SCREWS with the knurled points

By merely setting up the Knurled Point "Unbrako" in the customary way, using only ordinary pressure. you automatically lock them in place. There is no chance that they will vibrate or jar loose. You can be absolutely sure every one is staying in place without the continual need for checking up. There's less maintenance work required where these screws are used and one cause of breakdowns or accidents is definitely eliminated.

"Unbrako" Self-Lockers can be removed if desired, by using the ordinary hex bar wrench, and, of course, the screws can be used any number of times with equal locking effectiveness.

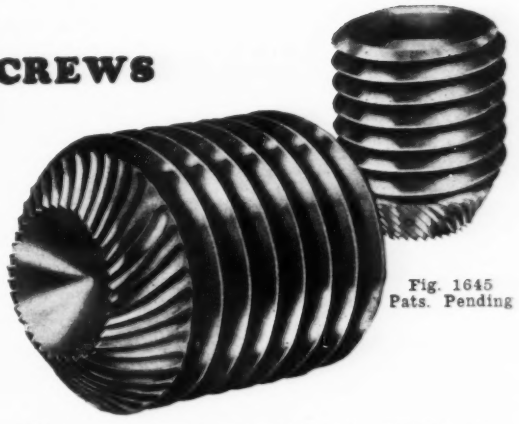


Fig. 1645 Pats. Pending

Why risk further trouble? Write today for complete information and samples.

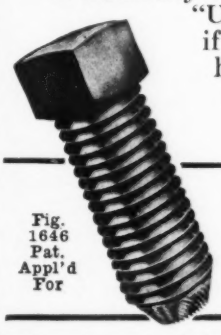


Fig. 1646 Pat. Appl'd For

"UNBRAKO" SQUARE HEAD SELF-LOCKING SET SCREWS offer this same unfailing protection combined with high strength and accuracy. We'd be glad to send you a sample so you can try them for yourself.

STANDARD PRESSED STEEL CO.

BRANCHES BOSTON DETROIT INDIANAPOLIS

JENKINTOWN, PENNA.

BOX 582

BRANCHES CHICAGO ST. LOUIS SAN FRANCISCO

Carolina Yarn Association Meets at Pinehurst Oct. 27-28

The Carolina Yarn Association held its annual golf tournament and outdoor sports program at The Carolina, Pinehurst, N. C., October 27-28. The mornings and afternoons were given over to golf, skeet, tennis and riding, with special entertainment being held in the evenings. The guests attended the Duke-Wake Forest football game on Saturday. The affair was thoroughly enjoyable and a good crowd was present. Sam Diggle of Dixie Mercerizing Company presided at the functions. Nearly 400 members and guests were present. Golf prizes were awarded to a large number of the participants.

◆

Nine Months U. S. Rayon Consumption Exceeds Total for All of 1938

Consumption of rayon yarn and staple fiber in the United States during the first nine months of this year aggregated 326,700,000 pounds, a figure essentially equal to the total consumption of 327,200,000 pounds reported for the full year 1938, states the current issue of *The Rayon Organon*, published by the Textile Economics Bureau, Inc.

Breakdown of the above figures show that 258,200,000 pounds of rayon yarn were consumed during the nine months ended September against 274,100,000 pounds for all of 1938. Rayon staple fiber consumption to September 30 this year aggregated 68,500,000 pounds against 53, 100,000 pounds for the full year 1938.

While record rayon consumption is expected for 1939, based upon the above figures, *The Organon* does not expect fourth quarter consumption to equal total of 122,000,000 pounds estimated for the three months July-September. In respect to fourth quarter outlook, the publication says in part:

"Rayon filament yarn consumption now approximates the industry's capacity to produce at present deniers spun. Beginning fourth quarter rayon stocks held by producers amount to less than a two weeks' supply. Thus it becomes significant that fourth quarter rayon yarn deliveries by producers undoubtedly cannot equal the record third quarter total which was made possible only by drawing on stocks in the amount of 19,600,000 pounds.

Consumption of cotton and wool also gained sharply during the first nine months and the use of both products for 1939 should far exceed the 1938 total based upon figures already in hand. Silk consumption for the nine months was greatly below a year ago.

Institute Heads Re-Elected

At the annual meeting of the board of directors of The Cotton-Textile Institute in New York on October 25, the directing officers, Claudius T. Murchison (right above), president, and Paul B. Halstead (left-, secretary and treasurer, were re-elected, along with G. H. Dorr, chairman of the board. C. F. Broughton, of New England, and Kemp P. Lewis, of Durham, N. C., were made vice-presidents.

For report of the annual meeting of the Institute, see page 72 of this issue.

Southeastern Section AATCC Hears Simmons and Stott

The fall meeting of the southeastern section of the American Association of Textile Chemists and Colorists was held at Fort Benning, near Columbus, Ga., on Saturday evening, October 7. There were approximately 150 members and guests in attendance.

The meeting consisted of a dinner session, which followed a tour of inspection of the Fort, which is the country's largest infantry training school. There were two speakers. The first was Philip H. Stott, of the technical laboratory of the dyestuff division of E. I. duPont deNemours & Co., Wilmington, Del., who presented the same paper on "The Dyeing of Nylon" that he had delivered at the annual convention of the national association in Boston in September.

John A. Simmons, general manager of Lanett Bleachery & Dye Works, Lanett, Ala., was the second and concluding speaker. Mr. Simmons reviewed briefly the contrast in conditions as regards dyestuff supply and quality today as being decidedly different from those prevailing in 1914 at the beginning of the previous European war.

A number of leading Columbus mill executives were the guests of the section at this meeting. These included E. W. Swift, president, Muscogee Mfg. Co.; Forbes Bradley, general manager, Columbus Mfg. Co.; F. B. Bradley, general manager, Eagle & Phenix Mills; Paul K. McKenney, president, Swift Mfg. Co.; N. S. Illges, president, Shannon Hosiery Mills; and R. M. Huff, vice-president, Eagle & Phenix Mills. Robert W. Philip, editor of COTTON, presided as chairman of the section.

It was announced that the annual meeting of the section, for election of officers, will be held in January.

National Association Hears Forum on Research-Education

A special feature of the annual convention of the National Association of Cotton Manufacturers, held at the Copley-Plaza Hotel, Boston, Mass., on Wednesday, October 18, was the presentation of the forum on textile education and research, conducted under the auspices of The Textile Foundation.

This was a revised edition of the forum presented throughout the South last spring, and included Frederick M. Feiker, of the American Engineering Council, Warren E. Emley, of the Bureau of Standards, George W. Taylor and Hiram S. Davis, of the Wharton School of the University of Pennsylvania, and Stanley B. Hunt, editor of the *Rayon Organon*. At Boston, the group was joined and directed by Franklin W. Hobbs, chairman of the board of directors of the Foundation; and Edward T. Pickard, secretary of the Foundation, was also on the program.

This group, each of whom is connected with research and education in the textile industry, drew for the New England manufacturers in attendance a vivid picture of accomplishments in these fields and stressed the needs along these lines for the future.

The association also heard reports from its officers, dealing mainly with policy and procedure under conditions imposed by the business pick-up and by the European war conditions.

Russell T. Fisher was re-elected as president of the association for his third term in this office. Previously he had been secretary for a number of years. Ralph C. Perkins, of Pilgrim Mills, Fall River, and C. F. Broughton, of Wamsutta Mills, New Bedford, were mare vice-presidents.

◆

Nylon Hosiery Placed on Sale

Nylon, the new textile fiber produced by E. I. duPont de Nemours & Co., made its first formal appearance commercially in a consumer article on October 24, when ladies' hosiery made of nylon was placed on sale in several department stores in Wilmington, Del. The yarn was supplied by the duPont nylon plant, the hosiery being made by several leading producers. The new product met with immediate and universal acceptance, the best selling number being a 51-gauge hose retailing at $1.35 per pair.

The duPont company is fast getting into production on the yarn—having just announced plans for an enlargement to the original building, and it is expected that hosiery and other products made of nylon will be generally available in retail outlets shortly after the first of the new year.

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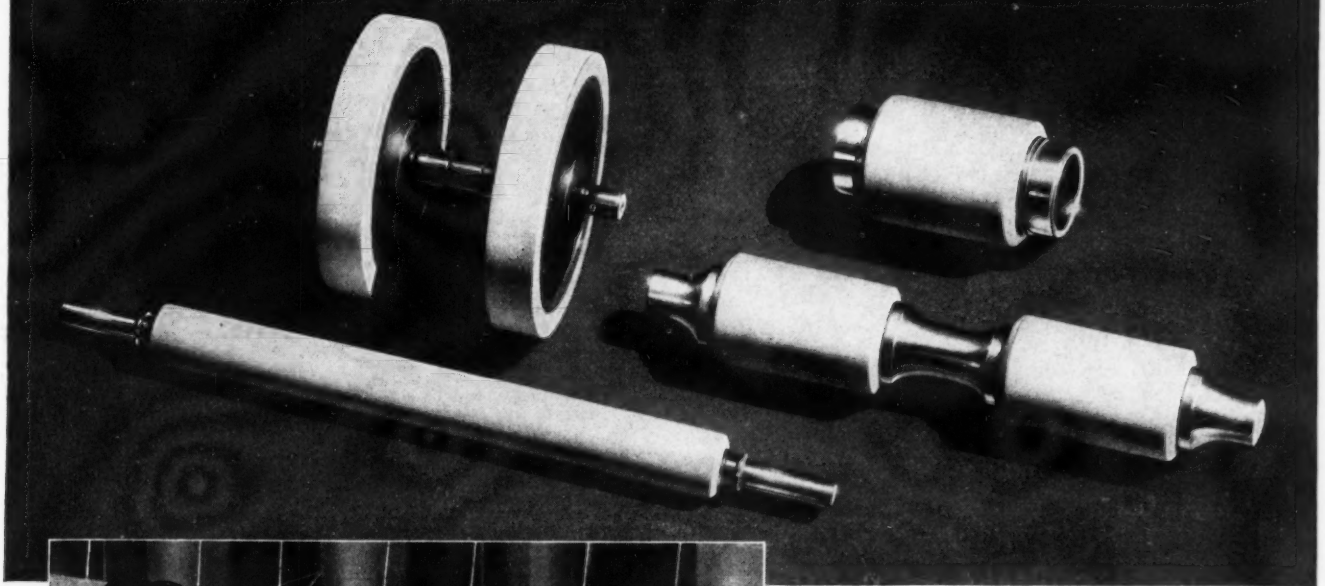

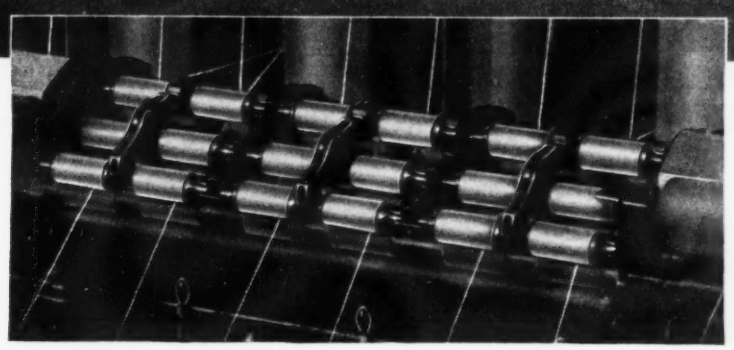

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Proved by more than a year's extensive use in leading textile mills, these Tempered Dayco Roll Covers are products of Dayton's famed laboratory controlled manufacturing methods. They represent the ultimate achievement in quality materials, skilled labor and modern equipment. They embody the results of 25 years' experience by trained technical experts in development, testing and production. So why not prove the money-saving advantages of their longer life and their greater efficiency? Write today for proof to

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Made by the World's Largest Manufacturer of V-Belts

PERSONAL NOTES
about Men You Know

GEORGE H. ESTES has been elected treasurer of the Continental Mills, Lewiston, Me., succeeding his father, HENRY B. ESTES, who for a number of years has been treasurer and agent of the company, and who continues as agent.

JAMES G. POTTINGER has been elected president-treasurer and general manager of Everlastik, Inc., Chelsea, Mass. For the past year he has been vice-president and treasurer of Super-Tone, Inc., and prior to that had been with the Reliance Manufacturing Company, Chicago, for 13 years.

BERTRAM H. SAUNDERS, who has been associated with the Hohokus (N. J.) Bleachery for 13 years, has been elected president, succeeding JAMES G. BLAUVELT, who recently retired.

J. J. RAUCH, for the past 29 years superintendent of the Victoria Cotton Mills, Rock Hill, S. C., has retired and has become city manager of Rock Hill by a unanimous vote of the council.

H. W. LOEPER, superintendent of the Cayauga Linen & Cotton Mills, No. 2, Lexington, N. C., has been recalled to Auburn, N. Y., the parent office of the company. MICHAEL COMERINSKY succeeds Mr. Loeper.

J. W. QUINN, formerly general superintendent of the American Yarn & Processing Company, Mt. Holly, N. C., has become associated with the Sapona Cotton Mills, Cedar Falls, N. C.

RAYMOND H. CHASE has become agent and assistant treasurer of the Spencer Mills, Inc., Spindale, N. C., succeeding EUGENE H. TIMANUS. Mr. Chase formerly was connected with the Warwick Mills, West Warwick, R. I. A. G. HEINSOHN, JR., formerly of the Cherokee Spinning Co., Knoxville, Tenn., is president and treasurer of these mills.

J. W. WOOD, general manager of the Gossett chain of mills in the Carolinas and Virginia has transferred his offices from Anderson S. C., to Charlotte. N. C. Other changes include: PHILIP C. GOSSETT, cost accountant, promoted to assistant treasurer of Chadwick-Hoskins Company and Gossett Mills, with headquarters in Charlotte; N. G. HARDIE, general superintendent of Chadwick-Hoskins Company plants, with headquarters at Charlotte, transferred to Anderson, S. C., as general superintendent of Gossett Mills. J. M. BOLT, formerly superintendent of Calhoun Mills, Calhoun Falls, S. C., transferred to Charlotte and promoted to succeed Mr. Hardie. Mr. Bolt is in turn succeeded by T. G. GRAY, formerly superintendent of the Williamston, (S. C.) Plant of the company, who is succeeded by A. D. MARTIN, formerly overseer of weaving at Calhoun Mills, and who in turn is succeeded by J. M. PAYNE, overseer of weaving at the Williamston Plant. P. A. WORTHY of the Toxaway plant has been promoted to overseer of weaving at the Williamston Plant of Gossett Mills.

CLARENCE C. GALLMAN has been promoted to assistant overseer of weaving at Gayle Plant, Springs Cotton Mills, Chester, S. C.

AUGUSTE RICHARD, formerly president and director of The Spool Cotton Company, and more recently president of that company's affiliate, the Crown Fastener Corporation, has become vice-president in charge of sales and merchandising of all divisions of the Pacific Mills. He will make his headquarters in New York City.

S. D. BOYD, formerly of the Arcade Cotton Mills, Rock Hills, S. C., has become superintendent of the Mansfield Mills, Inc., Lumberton, N. C.

L. N. HALE, formerly connected with the manufacturing division of Marshall Field & Company, Spray, N. C., has become production manager of the Drayton Mills, Spartanburg, S. C.

T. C. DREW, JR., who for a number of years has been associated with the Clifton (S. C.) Manufacturing Company, has become general superintendent of the Mayfair Cotton Mills, Spartanburg, S. C., where L. D. DELOACH was recently promoted from the superintendent to this newly created position of general manager.

J. L. CASSADA, formerly assistant manager of the Roanoke Manufacturing Company, Roanoke Rapids, N. C., is now superintendent of the Hartsville (S. C.) Cotton Mills.

JAMES OATES has resigned his position as superintendent of carding and spinning at the Santee Mills No. 2, Bamberg, S. C., and has accepted the position of superintendent of carding at Brookside Mills, Knoxville, Tenn.

KENNETH HORNE, textile graduate of N. C. State College, and formerly with Burlington (N. C.) Mills, has become associated with Carter Fabrics Corporation, Greensboro, N. C.

HOWARD K. HOUSER has been promoted from superintendent to treasurer and general manager of the Rhyne-Houser Manufacturing Company, Cherryville, N. C. He is a graduate of N. C. State College.

S. M. NEWSOM, Clemson textile graduate and formerly instructor at the Clemson textile school, has accepted a position with the Parker High School, Greenville, S. C., where he is teaching textiles.

J. A. COOK, formerly with the Winnsboro (S. C.) Mills, has become overseer of carding at the Erlanger Cotton Mills, Lexington, N. C.

E. P. JORDAN Clemson textile gradate of 1929 and formerly with Santee Mills, Orangeburg, S. C., has become connected with the Kendall Company, Paw Creek, N. C.

Obituary

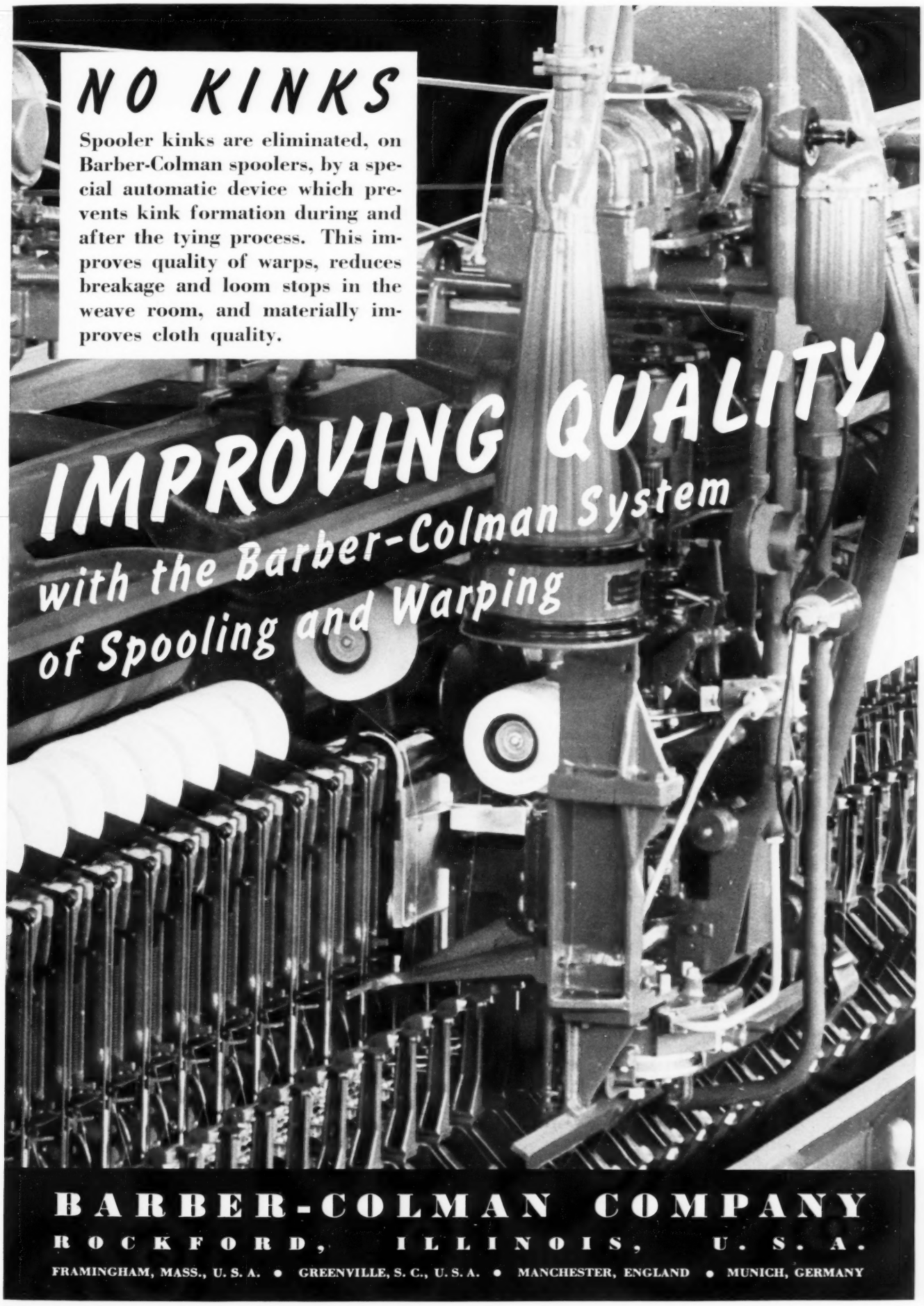
LABRON PORTER JONES, overseer of carding at the Ninety-Six (S. C.) Cotton Mills, passed away September 16 of a heart attack. He was 47 years of age.

ROBERT S. STEELE, SR., for many years superintendent of the LaFayette (Ga.) Cotton Mills, passed away at his home September 26 of a heart attack. He was 64 years of age.

W. H. MCKINNEY, for the past 11 years superintendent of the cloth room of the Oakland Cotton Mill, Newberry, S. C., a unit of the Kendall Company, died recently following an illness of several weeks.

JOHN SANFORD, chairman of the board of directors of the Bigelow-Sanford Carpet Company, passed away suddenly the latter part of September.

CANFIELD JORDAN, president of the W. H. & F Jordan, Jr., Manufacturing Company, Philadelphia, Pa., died September 13 at the Chestnut Hill Hospital.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Spooler kinks are eliminated, on Barber-Colman spoolers, by a special automatic device which prevents kink formation during and after the tying process. This improves quality of warps, reduces breakage and loom stops in the weave room, and materially improves cloth quality.
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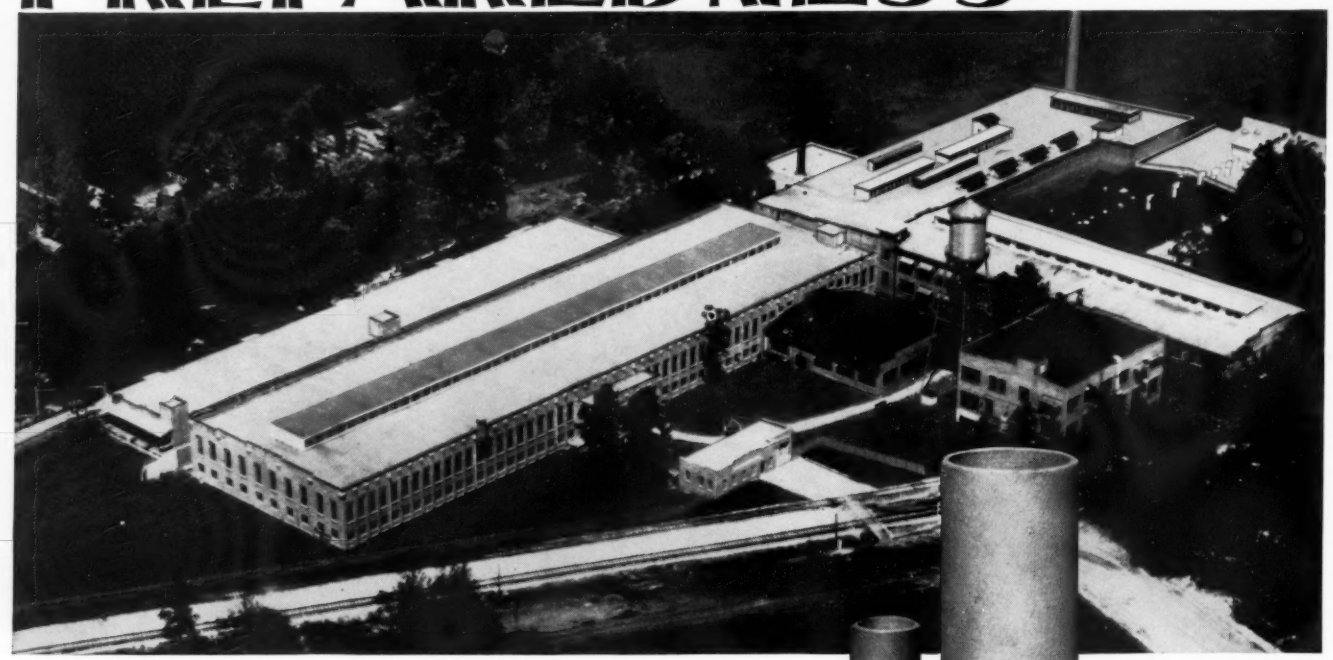
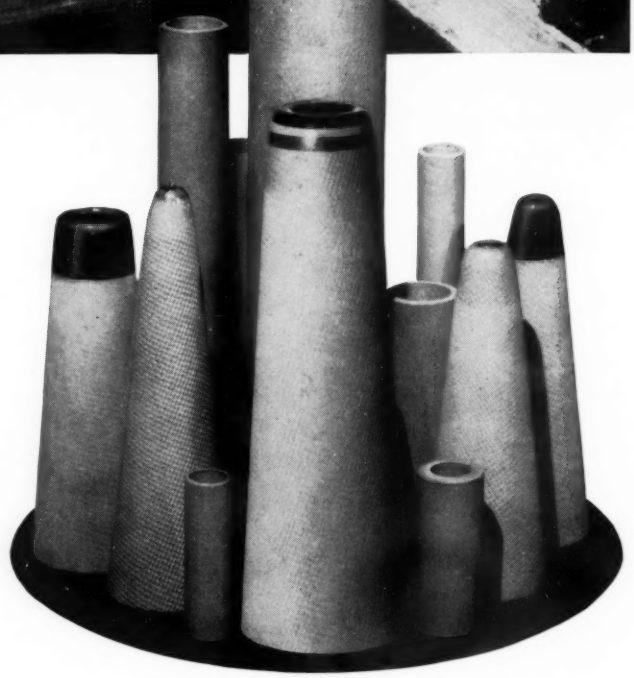
PREPAREDNESS

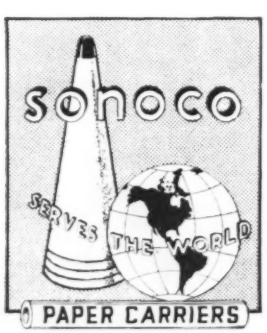


When things happen in rapid succession in business, as they frequently do, it is too late to start making preparations. Then comes the real test of a dependable source of supply—preparedness.

When Sonoco streamlined their production facilities at Hartsville in 1937 they planned 10 to 20 years ahead of their current needs. For more than 40 years this has been a Sonoco Policy—keeping ahead of the demand. . . Today they are, as always, fully prepared for any eventuality in their field.



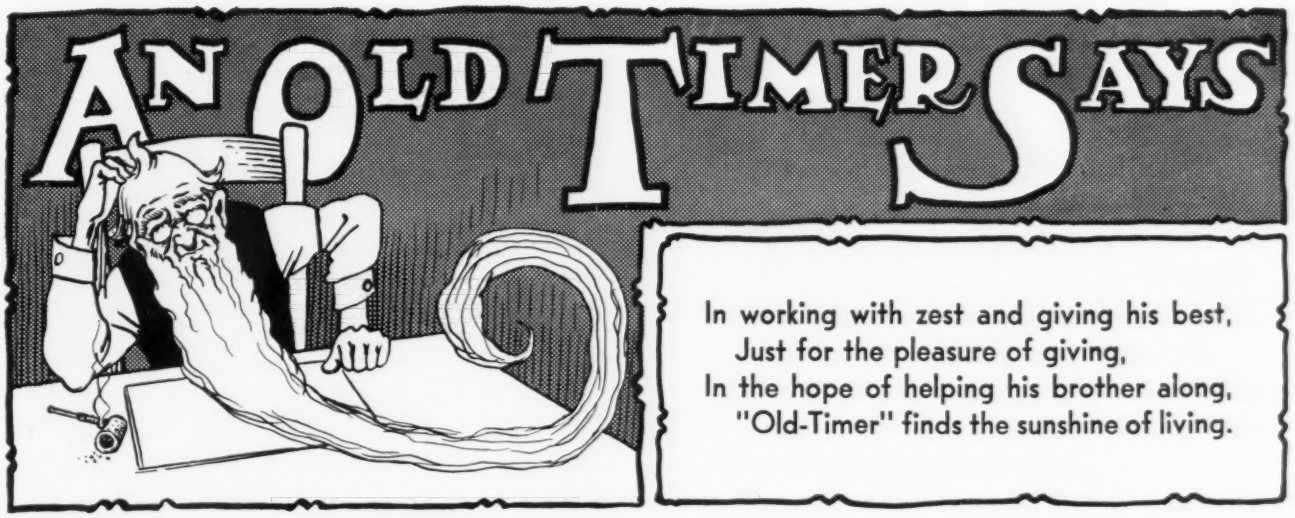
SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*



SONOCO PRODUCTS COMPANY

BRANTFORD ONT. HARTSVILLE S. C. MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

IMAGINATION AND PROGRESS

(Part 4) Continuing Old-Timer's review of "Pilgrim's Progress"—

This continues an unusual article by OLD-TIMER, *in which he is endeavoring to apply to present-day textile men the lessons taught in John Bunyan's "Pilgrim's Progress". The previous installments, in the August, September and October issues, started in with the book, and has brought the reader along with the principal character, Christian, on his journeying. At the end of the previous section, Christian had had his session with Mistrust and Timorous. Now, continuing the story, we find him with Discretion:*

THEN, in Bunyan's dream, he saw that Christian went on, trembling for fear of the lions, but taking good heed to the directions of the Porter. Christian asked the porter: "Sir, what house is this, and may I lodge here tonight?"

The Porter asked him how it happened that he had come so late, after the sun had set.

The modern-day "Christian" might have explained that he would have been there sooner, but he got careless and fell down on the job; he got to making a good salary and his success went to his head, but that he now saw how foolish he had been and was determined to gain success again and was seeking the aid of his older, and more experienced, friends.

"So Watchful, the Porter, rang a bell, at the sound of which came out of the door of the house a grave and beautiful damsel, named Discretion."

After Discretion had questioned Christian to find out if he were worthy she called several more of the family, and out came Prudence, Piety and Charity, and after a little more discourse with him they invited him in with the family.

As a man progresses in experience he gets acquainted with Discretion and learns to be cautious in his decisions, correct in his judgment, etc. He learns to be prudent in the handling of his employer's money; he learns that economy is not necessarily being what we term "stingy", but that true economy is the *wise expenditure of money.*

He finds out that Piety is not religious fanaticism but that a man who has a *clear conscience* is not a rascal; he can't be. Even an ignorant negro generally knows what is right and what is wrong in his relations to his co-workers. He finds that Charity does not always mean a man must have a fortune in dollars and be liberal in his gifts to the poor, but that a man must be charitable in his business dealing and social dealings with his fellow man; he must be open-minded with reference to overlooking the foults of his associates and employees. In other words, just shoot square and fair. That is Charity so far as dealing with people is concerned and that is the kind of Charity OLD-TIMER is forever admonishing his brother overseers and superintendents to have. Don't be little enough to use "spite work". Nothing but a little man will stoop to such. And, remember, fellows, you have to go a long way to find any man who has ever gained anything by spite work. It usually acts like the Australian boomerang; it comes right back and hits you in the face, just as it should do.

As Christian was departing from the House Beautiful, he asked Watchful, the Porter, if he had seen anyone pass. The Porter told him that he had seen a man, whose name was Faithful, pass.

"'Oh,' said the Christian, 'I know him, he is my townsman, my near neighbor.'

"When Christian began to go forward on his journey Discretion, Piety, Charity and Prudence would accompany him down to the foot of the hill. Christian said, "'As it was difficult coming up, so far as I can see, it is dangerous going down.' 'Yes,' said Prudence, 'so it is; for it is a hard matter for a man to go down into the Valley of Humiliation, as thou art now, and to catch no slip by the way; therefore,' said they, 'are we come to accompany thee down the hill.'"

In our reasoning of today, we say it is hard for a man to hold his head up under Humiliation. It takes a man of strong will power to apologize to his fellow worker for a wrong he knows he has done.

As Christian proceeded on his journey he finally caught up with Faithful. He and Faithful had many experiences to relate to each other concerning their

pilgrimage, and these experiences are very similar to the experiences you and I encounter in these days in our pilgrimage of seeking success in our work. However, these conversations between Christian and Faithful are too long to quote in detail here, and we will have to skip over them, but OLD-TIMER hopes you will be interested enough to read Pilgrim's Progress and have the opportunity of applying your own interpretation.

Faithful told Christian that one man whom he had met on the journey was Shame, and that Shame told him that "a tender conscience was an unmanly thing; and that for a man to watch over his words and ways, so as to tie up himself from the hectoring liberty that the brave spirits of the times accustomed themselves unto, would make him a ridicule of the times."

Shame also told Faithful that it was a shame to ask his neighbor for forgiveness for petty faults or to make restitution where he had taken from any.

How often you hear the slick-tongued rascal of today handing out a line similar to this talk in his efforts to discourage people who are trying to make something of themselves. And, following this line of reasoning, note how Christian continues: As he and Faithful proceeded on their journey they met up with another man whom Christian said was named Talkative. This fellow, Talkative, soon had Faithful interested; he was smart, well read and seemed to know a lot about any subject upon which Faithful asked him to talk. In fact, Talkative told Faithful just to name his subject and he would tell him all about it, and not having a quick response as to what subject they would discuss he announced that he would talk of "things heavenly or things earthly; things moral or things evangelical, things sacred or things profane; things past or things to come; things foreign or things at home; things more essential or things circumstantial."

Well, when he cut loose like that Faithful began to get a little skeptical and went over to Christian to see what he thought of Talkative.

"'Surely this man will make a very excellent pilgrim'", said Faithful.

"At this Christian modestly smiled, and said, 'This man with whom you are so taken will beguile with this tongue of his twenty of them that know him not.'

"'Do you know him, then?'" said Faithful.

Christian answered, "'Know him. Yes, better than he knows himself; he dwelleth in our town.'"

Christian, discussing Talkative further, informed Faithful that this man seemed well enaugh to those who were not well acquainted with him, but that he was "best abroad; near home he is ugly enough" or a fraud.

"This man is for any company, and for any talk. As he talketh now with you, so will he talk when he is on the ale bench; and the more drink he hath in his crown, the more of these things he hath in his mouth."

Faithful said that he was greatly deceived, and remarked, "'Well, I see that saying and doing are two things, and hereafter I shall better observe this distinction.'"

"'They are', said Christian, 'two things indeed, and are as diverse as are the soul and the body.' and continued. "'Hearing is but as the sowing of the seed; talking is not sufficient to prove that fruit is indeed in the heart and life.'"

Talking is not sufficient proof that there will be fruit. Men must be doers, must accomplish things, and not only talk about them. This is like that fellow you know; he can tell you all about the job and just how it should be done, but when it comes to doing the actual work, he is not there.

OLD-TIMER, himself, can sure talk a wonderful game of golf; he can tell you just exactly how to stop that slice: how to get 30 yards more distance with your woods, and when it comes to playing out the traps, oh boy!, he can tell you how to lay them dead to the pin. Sure, he "talks" a fine game, then can go right out and slice 'em like rainbows, hook 'em like fish hooks, and after lancing at it two or three times, pick up and walk out of the traps. Yes, talking and doing are two very different things, especially when it comes to running a textile mill in these trying days.

"Now when they had got almost quite out of this wilderness Faithful chanced to cast his eye back, and espied one coming after them, and he knew him."

"Faithful said to Christian, "'Oh, yonder comes my good friend Evangel'", and Christian replied, "'He is my good friend too, for, it was he that set me on the way to the gate.'

"'Welcome (said Christian) my good Evangelist, the sight of thy countenance brings to my remembrance thy ancient kindness and unwearied laboring for my eternal good.'

Evangelist asked them: "'How hath it fared with you my friends, since the time of our last parting? What have you met with and how have you behaved yourselves?'"

"Then Christian and Faithful told him of all the things that had happened to them in the way (on their journey) and how with what difficulty they had arrived at that place."

Evangelist said: "'Right glad am I, not that you have met with trials, but that you have been victors.'"

He was glad that, regardless of the hard road, they had continued in the way, he said, "'To this very day, I have sowed and you have reaped, and the day is coming when "he that soweth and he that reapeth shall rejoice together"', that is, if you hold out. The goal is before you, so strive on that you may obtain it. Some there be that set out for the goal and after they have gone far for it, another comes in and takes it from them. "Hold fast, therefore, that you have".'

Evangelist indicated to them that they were not yet out of danger, because of many deceitful men.

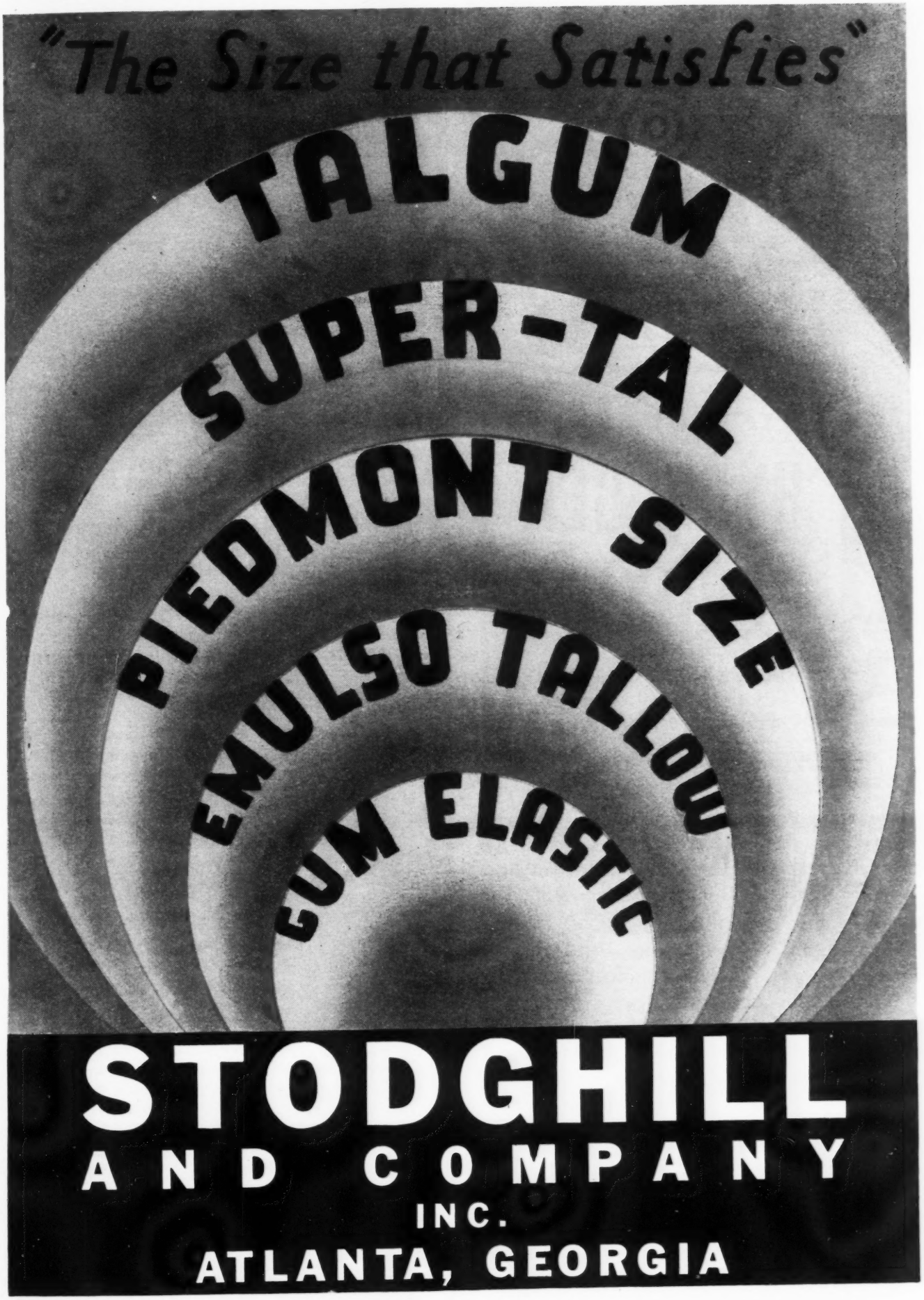
Yes, there still are, after 300 years, many deceitful men, who not only want your job, but many who although they cannot get it, would like to see you fail—just pure jealousy.

Evangelist told them that they were now almost out of the wilderness and would soon "'come into a town that you will by-and-by see before you, and in that town you will be hardly beset with enemies.' . . . .

"Then I saw in my dream that when they were got out of the wilderness, they presently saw a town before them: the name of that town is Vanity."

Here is human nature popping up again. It is impossible to explain, but nevertheless is a fact, that all men on their way to success must pass through this town called Vanity. In fact, there are a great many who never get through the town of Vanity. They get drunk with vanity; their success goes to their heads: they have money to spend and cannot resist the temptation to show off; and they think they can make people believe they are something which they are not. The hard thing to explain, or to understand is, that we see the other fellow do it and criticize him severely, and then when we get along on that same road to success we do the very same things which we said the other fellow was a darned fool for doing. Who can tell us something about human nature, anyway?

(Continued on page 110.)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Spinning Band Breakage

EDITOR COTTON:

In answer to the letter from "CONTRIBUTOR NO. 6820" on page 129 of the May issue concerning high band breakage, the writer is submitting these suggestions with the hope that they will be of some assistance, and will say:

1. The contributor is correct in having to tie on from two to three thousand bands on 26,000 spindles a day running two shifts, for the writer has compared that amount with what is being used in his own organization tying on 20,000 through Howard and Bullough frames built in 1908.

2. The normal amount for 26,000 spindles running two shifts would be approximately 350 to 450 bands a day.

3. The cause besides humidity for band breakage depends on how the bands are made. There are different ways of making bands. The way mentioned by the contributor and also the way our firm is making them. Some are made with yarn mixed with the roving; others with card waste; and others made with cheap cotton ¾-inch staple, but we have found that the best bands made were those made of the best cotton roving made from Egyptian cotton 1⅝-inch staple.

4. The simplest method of applying bands at an even tension is that of having it done by a man who has had experience in doing it. After two or three years' experience a man will have the correct tension in his arms, but if a man is just learning, and works for four or five months and then changes to another job, and he has to be replaced, the whole thing has to start all over again. Therefore, the result is unequalized bands.

5. The writer has heard of a solution which can be obtained that will render bands impervious to atmospheric conditions, but has never used it.

6. Most bands break at the knot; if the band has been on one month or one year it will be found that it will break at the knot. The reason is that when passing the two ends of the band through the loop on the other end when putting on a band it leaves only half of the strand where the knot is made. In our plant we use a square knot and cut it about one inch away from the tie.

7. Would suggest that the contributor make his band with good cotton, at least 1½-inch staple, with the correct amount of twist in the roving, .¼ turns per inch. The trouble with the bands breaking from slipping off is that they are two large for the whorl thus slipping off and wearing out by rubbing on the spindle base. We keep about enough degrees relative humidity in the room to give our cotton a regain of from 6½ to 8 per cent

CONTRIBUTOR NO. 6855

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

"Can Textile Testing Be Standardized?"--an Answer

EDITOR COTTON:

I have read with interest the editorial on page 55 of the June issue of COTTON, wherein is asked the question "Can textile testing be standardized?" In attempting to apply an answer to this question it seems to me that a straight yes or no answer must be qualified, just as was pointed out in the editorial.

My answer to the question is "no", and I shall attempt to qualify my answer as strictly applying to the card room.

When I answer in the negative, do not be mistaken by thinking that I belong to the school of thought that believes things as they stand are perfect and cannot be improved upon. On the other hand, I believe that textile testing can be improved upon a great deal and brought much nearer to a standard than it is today. This would make it of much more benefit to the entire textile industry than it is at the present time.

My answer also applies strictly to cotton because it is here that we meet our first stumbling block when we talk of standardization.

Cotton is a product of nature and subject to all the variations of climate, moisture, etc. that nature may put into use. Thus we still have cotton, but a vastly different cotton is grown in the various sections of the country, or in different growing seasons.

For a card room test in one mill to be of any practical value to another mill, I think the following items should be noted. Section of the country in which the cotton was grown, character, grade, and staple; type, speeds, and settings of all machines through which cotton is processed.

In looking over the foregoing items, one can see the vast number of combinations of cotton, machinery, speeds, and settings that can be made; and all of these will have a bearing on the result of any test that is conducted.

Let us take as an example a waste test on a card (the percentage of waste taken out by the card). What would a test of this kind be worth to another mill or in comparison with another similar test if the following information were not given: We will start off first with the cotton. Where was it grown (Delta, Upland, or where), how was it picked (by hand or machine), was it gin cut or not (gin cut cotton makes much more fly and invisible waste than cotton that is not gin cut), how was it baled (standard, compressed or high density)?

We then come to the mill and machinery. What type of opening machinery was used and at what speed was it run? This will have much to do with the result obtained on the card test. What make and type of picker was used (single-process, two-process, or three-process,) number and type of beaters and their speeds)? Then we come to the machine we are running the test on, the card, and we must get its speeds and settings.

So from this we see that information of processing up to the machine being tested is very important in accurately reading the results of the test that are made on the card.

There are also many other things that will cause variations in results of tests which may have been conducted under seemingly almost identical conditions, such as temperature, humidity, whether the stock has been oiled or not, etc.

After considering the foregoing I do not believe textile testing on cotton can be standardized to a very close degree. I do believe, however, that if enough information of the type I have mentioned is given, these tests can be very valuable to all mills concerned.

Many mills have got into serious difficulties trying to adopt methods or secure same results of tests that were conducted under conditions that were entirely different from their own.

Noting the improvements that have been made in the past few years in synthetic fibers, I believe that textile testing with these fibers can be standardized to a much closer degree than on the natural fibers.

Synthetic fibers, being man made, are subject to control from their beginning and I see no reason why textile tests conducted on their processing could not be standardized to a close degree, providing all information of the test is given along with the results of the test. This information is also very essential in conducting tests of adaptability of machinery and supplies to the product that is to be manufactured.

CONTRIBUTOR No. 6970

Battery Filler's Job

EDITOR COTTON:

There has been some discussion among mill men and in the textile journals on the number of batteries a battery filler can attend. We have run some tests on this phase of weaving and will pass our findings along for the benefit of others.

We find that spinning 41s filling yarn from a 1⅜-inch ring we can (from all good manufacturing points) put 2400 yards of yarn on an 8-inch filling quill. This full quill, when put into a loom weaving 39-inch goods and making 170 picks per minute, will require 12 minutes to exhaust the yarn, or run out completely.

From studies made, and allowing time out for rest periods, a drink of water, and a limited amount of small talk by the battery filler, it is practical to have the battery filler fill 10 looms for each minute that a single quill of filling will run in the loom (12 minutes × 10 looms = 120 looms). Thus, at our plant, the battery filler's job is 120 looms when running 41s filling on the 8-inch quill, spun on the 1⅜-inch ring.

The customary shuttle used with an opening of 1⅜-inch width and 1⅜-inch depth is not sufficiently large enough to operate this 2400-yard bobbin of filling; but the shuttle with an opening of 1 7/16-inch width and 1 7/16-inch depth is adequate.

Not only that, but looms built as early as 1905 will operate satisfactorily on this larger shuttle if only a few minor changes are made. We did not alter the amount of stock in the sidewalls of the shuttle but left them the same thickness of ¼-inch and made the shuttle 1/16-inch wider overall and 1/16-inch higher overall.

By using this 1/16-inch larger shuttle we found that we could make our filling quill in the spinning room 1/16-inch larger in diameter, which gives us 389 yards more yarn on the quill, which is quite a saving in cost to be gained by this little 1/16-inch; it amounts to about 20 looms more to each battery filler and of course there is some gain in the spinning department as it is not necessary to doff quite so often.

Besides this, there are fewer filling changes at the looms, which brings about a reduction in thick and thin places in the cloth.

CONTRIBUTOR No. 6975

Set Back of Card Often

EDITOR COTTON:

Underneath the licker-in is a casing known as the licker-in screen; I have a few remarks to make about this part of the card.

Cotton comes in contact with this screen due to the action of centrifugal force, just as it does with the mote knives. Now this screen is not always considered of importance by carders, according to the length of time the cards are run before having this part cleaned and set properly. Many carders

have this part cleaned and set about twice a year, but I think it should be taken care of more often than this.

I learned to grind cards (on a set of 40) by setting the flats on one grinding and setting the back on the next grinding. In other words, I would alternate between the flats and the back of the card every grinding. In this way the cards can be kept in better operating condition than by just setting the back of the card twice per year.

When the screen is not cleaned often, it is found that oil, gum, dirt, trash, etc., will lodge against the screen and clog the openings; at such times no cleaning is being done at this point. The impurities that should have passed through the screen by their own weight are carried on through with the stock to crowd the cylinder and flats so that they cannot do their work properly. Consequently, there is a cloudy sliver that is full of small pieces of trash and small neps.

These neps, as we all know, are bad on the processing of the yarn. Once a tying-in man asked me about the neps, saying that when the knot is tied where there is a nep the knot would break and cause the tying-in man much trouble.

In line with setting the card screen more often, the card tender will sometimes let a thick end of lap run through the feed roll and this will push the mote knives and licker-in screen away from the licker-in. With settings only every six months the card will run all this time without any cleaning at this point at all.

CONTRIBUTOR No. 6973

Training Card Grinders (Article 2)

THIS is the second and concluding installment of a discussion on training card grinders. The first article, on page 155 of the October issue, told of training the young grinder for the actual grinding operation. This article points out some of the irregular jobs that may come up in his daily grinding routine. Copies of the foregoing installment may be secured upon request . . . . . .

AFTER the young card grinder is taught the basic principles of grinding, he must still be schooled in the various jobs which may occur in any grinder's daily routine. Training along this line will be a good investment for the mill.

He should be taught that attention must be given to the flat grinding motions. When this motion is set on a new card, with new flats and chains, there is little trouble, but eventually the chains elongate or stretch, but the parts of the flat grinding motion do not; thus the same setting relationship is not maintained. As the chains become longer so does the space between each flat; therefore the raising and lowering of each flat to and from the grinding roll is likely not to be correct. The wear may be slight, and the action may only be slightly delayed, but this defect continually occurring will result in incorrectly ground flats.

To be in proper working position, every flat should be raised so that the grinding roll will contact the extreme "heel" of the wire and remain so for the full width of the flat and be immediately released as the "toe" of the wire passes in the roll. If the flats are held too long at this point extra grinding occurs and the toe of the wire will be rounded. Through deficiency of this operation, I have seen flats which have been rounded from heel to toe in extreme cases. Therefore, when the flats are being ground, the operation of the grinding motions and flats should be checked thoroughly.

On the Saco-Pettee cards there are two setting points that need attention. In Fig. 1, point A is to govern or check the holding of each flat by the catch B, which should be released immediately after the toe of the flat leaves the point of abrasion by the grinding roll. When the flat is released, the catch B should be allowed to fall back so that the front edge of the catch arrives at a point about ¼-inch from the back edge of the flat that has just been ground; that is, in a position ready and in time to raise the next flat for grinding. This latter setting is governed by the setting point composed of screw and check nut as shown at C in Fig. 1.

Fig. 2 illustrates the latter position of the motion.

Setting the Weights

Another important point concerning this motion is to determine that all weights connected with it are set evenly on both sides of the card because these are necessary for holding flats in the proper position upon being raised to the grinding roll as they are passed over the small arcs on each side of the card. These arcs are connected to separate

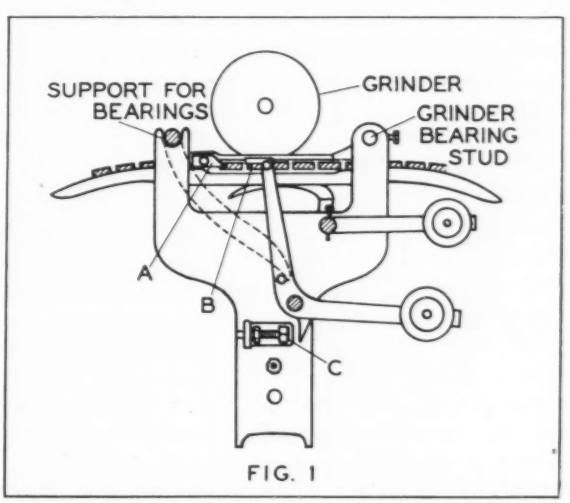

FIG. 1

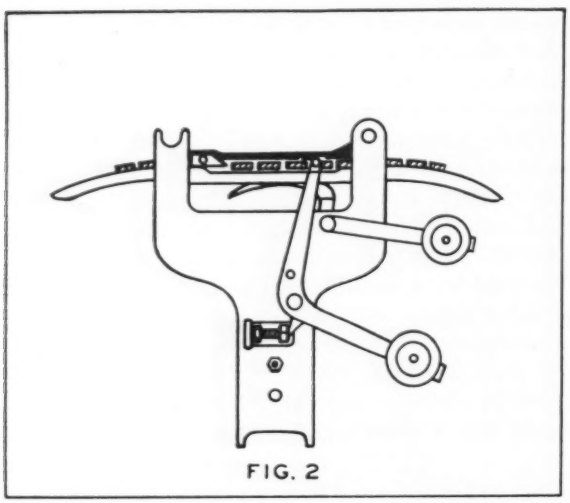

FIG. 2

studs which hold the weights as illustrated in Figs. 1 and 2.

The center stud for the catch lever with weight attached is also a support for the cross bar which supports the roll bearings.

The slipper or catch is governed by a spring tension which is attached to the stem of the catch and the bushing on the lever. This spring must have enough tension to allow the catch to press downward as it is released from each preceding flat during grinding. If one of the springs break, a good method is to secure a new spring with a long straight end about 4 inches long and pass the straight end through the hole in the bushing first, then attach to the stem of the catch and push the catch in place. This is a tricky job sometimes, especially for a young grinder.

A good tension is necessary and most important, and weak springs should be renewed; the catches also require examination for wear at the lip or point which comes in contact with flat edges. Badly worn catches may cause missing of flat, thus eliminating grinding.

On a Whitin card the aforementioned is very important as there are two slippers. The performance of these is similar to the one on the Saco-Pettee card, though they are operated with a different mechanism. On the Whitin card the essential factor is to insure both sides being synchronized. In other words, always ascertain whether the small weights on either side of the card rise and fall at the same time. Adjustments are provided to obtain this correct synchronization.

Dismantling and Assembling Flats

On the Saco-Pettee card the flat grinding stand on the opposite side of the card from the grinding motion may not be properly aligned because these stands are not pinned as is the grinding motion stand, so the flats may be thrown out of alignment for grinding if the stand is not properly centered.

Flats should be tested with a straight edge, using the grinding stands as a guide because sometimes one chain may be tighter than the other, which will tend to throw flats at a slight angle.

It might be well to touch upon the dismantling and assembling of flats. When a cylinder fillet has to be re-drawn or the card has to be re-clothed, it calls for about half of the flats to be removed, and in doing so, care should be exercised not to damage the wire in them as they are being transferred to a box or truck. A method which we have found satisfactory is to place two flats together, wire to wire, which protects the wire on both flats. When the flats are being assembled the flat screws should be oiled before being replaced.

When a new set of flats is being assembled greater caution is necessary. When new flats are used, new chains should also be applied and the latter should be soaked in oil and then wiped off before being used, doing this with a rag or some waste dipped in graphite. This is essential as oil and graphite applied in this manner mean longer life as well as smoother operation of chains. Another rule is never to break a flat chain in order to place it around the sprocket shaft. It is better to remove the opposite stand to the flat driving motion and assemble both chains over at this point. Before assembling the chains, however, it is important to examine the sprockets, sprocket shaft, and bearings in the front stands, as well as the other pulleys over which the flats travel. The rigid bends should be checked for wear. I have seen a card on which one of the bends had worn in the rear of the card, leaving a ridge about $\frac{1}{8}$-inch wide. Worn stands, of course, can be re-bushed and fitted to a new shaft.

Flat driving gears should also be checked for wear and easy running because it must be remembered that new flat chains will make the set tighter. The flat adjusting stands should also be returned to their lowest position before attempting to assemble new flats. All five settings will have to be raised slightly to make a clearance between the cylinder and flats.

Having had the sprockets, etc., attended to and every detail in order for assembling, each chain should be secured by a skewer or spindle as several flats must be assembled in the rear of the card on the bends first, and if flat chains are not secured as stated, the result can easily be estimated—a sudden crash of the flats. When a possible amount of flats have been secured, these may be pulled forward toward the front of the card, on the bends, after releasing the spindles. Then upon reaching the sprocket, see that the first flat gears with both sprockets evenly and that the flats are being cranked over the sprockets after more flats are added. This is important. The top section of the chain should be kept tight when being cranked around to avoid jumping of sprockets. Other than assuring that the rear stands are properly assembled, the rest of the job is easy. Flats at the setting points may be eliminated for setting during the operation.

Cutting the Chains

Cutting chains is a job which the grinder may be called upon to perform when the chains are too slack and the flats are dragging near the plates. For this job tools shown in Fig. 3 are satisfactory; they are clamps, a weight with a $\frac{3}{4}$-inch diameter hole in the center, and two punches. When cutting the

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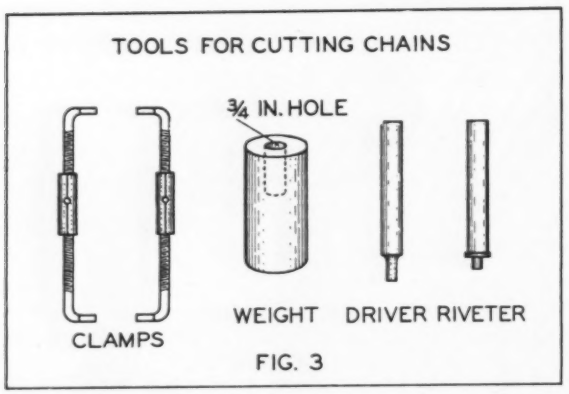

FIG. 3

chains the first thing to do it to lower the flat adjusting stands to their lowest position. This being done, flats can be removed from a point over the back stand to the next stand and the clamps extended as far as possible, the ends of which can be inserted through the nearest links of the chains on both sides.

As the clamps have left- and right-hand screws, the chains can be adjusted to determine how many links can be removed. When this is decided upon, the chains can be broken by applying the weight with the hole against the inside of each chain opposite the ferrule to be driven out, which is done with the hammer and the punch (with the longer end). Having cut out the necessary links, a new ferrule is required at this point, and this is replaced by someone holding the weight with the solid end against the inside of the chain while the ferrule is riveted with the hammer and the riveter punch. In riveting, care must be taken to see that the ferrules are not too tight—the links should work easily.

Grinders should never try to cut out two flats when only one is necessary. Sometimes the grinder can *almost* take out two flats, but only one should be removed, and when the two are taken out it often causes the cylinder and flats to become faced or raised because the chains are too tight; this will also cause excessive wear on the flat driving gears.

When two flats are taken out, only two ferrules have to be installed, but if one flat is eliminated, four ferrules must be used, in addition to bending the links to fit; still, removing one flat is better than removing two if the chains are to be too tight. Flats should never be so tight that they make a creaking sound when working. After replacing the ferrules the flats are then assembled as before.

In some mills the grinders have to prepare the cylinders and doffers for clothing. If the wire has been split or raised, but is worth re-drawing, it should be removed with care. All the tacks should be taken out as it is removed and the wire should be rubbed back into place. This being done, the condition of the surface of the bare doffer and cylinder requires careful inspection for rust, unsatisfactory plugs, and the proper pegging of all tack holes.

Some mills use a solid grinding roll to polish the surface of the doffer and cylinder lightly. Now, after polishing the surfaces, though I have never seen it done in American mills, I believe it best to apply a light coat of white paint on the surface, as this will combat rust and slippage. Some mills in England do this with good results.

Again I wish to emphasize: It is important that we train our card grinders just as we do our other operatives in the mill. The results will be well worthwhile.

D. E. (R. I.)

Hard Ends in Raw Stock Dyed Roving

"CONTRIBUTOR NO. 6933" is having trouble with hard ends when running raw stock dyed 15/16-inch cotton, and has asked for proper settings for his fly frames to remedy the difficulty. This question appeared on page 158 of the October issue of COTTON. His present set-up is as follows:

Slubber: Front roll 240 r.p.m., 64-grain drawing sliver, making 56 hank roving. Intermediate: Front roll 190 r.p.m. making 1.40 hank roving with double creel of .56 hank roving. Speeder: Front roll 105 r.p.m. making 4.60 hank roving from double creel of 1.40 hank roving.

I advise a complete check-up from the picker room through the cards and drawing and he should be sure that the cotton is properly dried and that very little if any, re-worked waste is put into the stock.

Having made certain that he is making an even lap, I would go to the drawing and check it thoroughly in order to assure an even sliver. At the same time, I would determine whether or not the operators are piecing-up properly. He should cut the twist on the slubber as low as possible and then lower the speed about 10 per cent below the speed recommended by the manufacturer of the machine.

If I changed the roll setting at all on the slubbers, intermediates or speeders, I believe I would close up rather than widen the distance between the rolls. This man should also inspect the tension and lay gears on all fly frames and see that all rolls are in good shape and correctly weighted.

In running colored work we find that we have more trouble on some colors than others, and each individual plant has to work this problem out.

CONTRIBUTOR NO. 6939

EDITOR COTTON:

This is in answer to "CONTRIBUTOR NO. 6933" who asks about preventing hard ends on his raw stock dyed cotton. The usual difficulty encountered in running raw stock dyed cotton is that the mills do not season the cotton sufficiently long before processing, i. e., two weeks or more, and also that when the work runs bad they usually put in twist instead of taking it out.

From the speeds given, it would seem that "CON-

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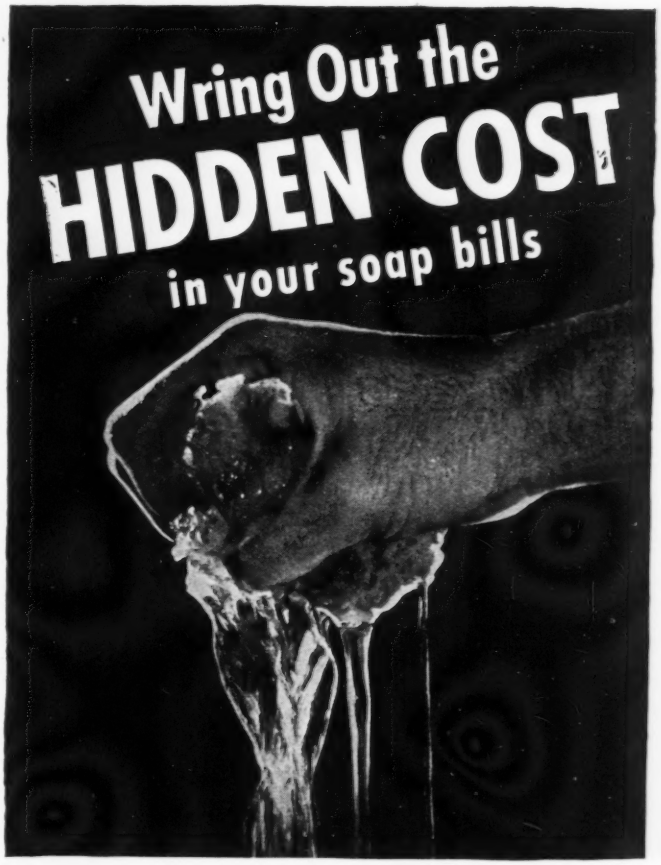

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TRIBUTOR No. 6933" is running his slubbers somewhere near catalog speed and is running his intermediates very much faster and his speeders slower than catalog speed.

CONTRIBUTOR No. 6940

◆

EDITOR COTTON:

If "CONTRIBUTOR No. 6933" will get his twist right in his roving I think he will be able to eliminate many of the hard ends. We are using the following settings and find them satisfactory:

Slubber, front roll 235 r.p.m. set front roll from middle 1⅛-inch, middle and back rolls 1¾-inch—12x6 frames. Intermediates, front from middle 1⅛-inch, middle and back roll 1½-inch, on 10x5 frames. Speeders, front from middle 1 3/16-inch, middle and back 1¾-inch, 8x3½ frames.

CONTRIBUTOR No. 6941

◆

EDITOR COTTON:

In reply to "CONTRIBUTOR No. 6933" I will say that if he is having trouble with hard ends on all three of his frame processes it appears that his main trouble is in the roller settings. However, an excess of twist in roving will also cause much trouble from hard ends in subsequent processes. In checking over his front roll speeds I find that they are well in line for the stock being run and the roving delivered.

When we come to setting cotton frames we find that there are five major points which govern these settings and determine whether the work will run good or bad. These are: Length of staple being run, speed, twist, draft, and size or bulk of stock being worked. Each of these five points have a certain amount of weight in determining the correct settings. The more out of line or off standard any of these points are the more direct effect it will have on the settings.

It is a proven fact that all roll settings should be greater than the length of staple being run. If the settings are not greater than the staple of cotton being run, then either hard ends or broken fibers will result.

Since raw stock dyed cotton is usually harder to draft than regular cotton, the settings I am giving for the roving frames may prove helpful to this contributor, but it must be remembered that the conditions in no two plants are exactly the same so variations from these settings may have to be made to obtain the best results. The settings are for 15/16-inch cotton: Slubber: Front to middle 1¼-inch, middle to back 1 5/16-inch. Intermediate: Front to middle 1 3/16-inch, middle to back 1¼-inch. Speeder: Front to middle 1⅛-inch, middle to back 1 3/16-inch.

If the contributor's twists are standard or near standard, these settings should work; however, that elusive quality of cotton known as "character" has much to do with its drafting qualities.

CONTRIBUTOR No. 6942

◆

EDITOR COTTON:

In answer to "CONTRIBUTOR No. 6933" we are giving herewith a few settings and figures regarding the running of our colored roving.

BOTTOM ROLL SETTINGS		
Slubbers & Ints.	Front to second roll	— 1-3/16-inch
	Second to third roll	— 1-1/2 -inch
Speeders	Front to second roll	— 1-5/32-inch
	Second to third roll	— 1-1/2 -inch
ROLL WEIGHTS		
Slubbers	Front roll —20	pounds—10 lbs. each boss.
	Middle roll—10	pounds } Saddle type — 5 lbs.
	Back roll —10	pounds } each boss
Intermediates	Front roll —17	pounds—8.5 lbs. each boss.
	Middle roll— 8.5	pounds } Saddle type — 4.25
	Back roll — 8.5	pounds } lbs. each boss.
Speeders	Front roll —20	pounds—10 lbs. each boss.
	Middle roll— 8.5	pounds } Saddle type — 4.25
	Back roll — 8.5	pounds } lbs. each boss.
TWIST MULTIPLES		
Slubbers	.625 H. R.	— Twist multiple — 1.23
Intermediates	1.29 H. R.	— Twist multiple — 1.37
Speeders	3.60 H. R.	— Twist multiple — 1.41
	6.00 H. R.	— Twist multiple — 1.54
SPINDLE SPEEDS		
Slubbers	692 r. p. m.	(12 x 6)
Intermediates	989 r. p. m.	(9 x 4½)
Speeders	1136 r. p. m.	(8 x 4)

The most prevalent cause for our hard ends has been found to be bad rolls, bad habits of operators, and occasionally long staple cotton.

CONTRIBUTOR No. 6943

An Old-Timer Says—

(Continued from page 100.)

This town Vanity being on the road that all pilgrims had to travel, on their way to the Celestial City, the unscrupulous people of the town set up a fair, and called it Vanity Fair. This fair was kept open all the year, and consisted of all the known temptations of that day which might ensnare the pilgrims passing through. Bunyan described some of these temptations as "pleasures and delights of all sorts, lusts . . . harlots, bawds . . . silver, gold, precious stones, and what not." In other words, anything to appeal to a man's vanity. He also described some of the residents of the town of Vanity, giving them names to indicate their character. For example, he says the name of the judge of that town was Lord Hate-good; that certain witnesses in court, where Christian and Faithful were tried, were named Liar, Malice, Envy, Superstition and Pick-thank. The testimony was such as you may hear in these modern courts of ours today, especially where the so-called shyster lawyer holds forth—are we civilized, or are we not?

Some of the more prominent citizens of this town were described as Lord Carnal-delight, Lord Luxurious, Lord-desire-of-vain-glory, Lord Lechery, Sir Having Greedy, etc. All of which shows what temptations a man on his way to success has to contend with when he goes through the town of Vanity, and this old law of human nature tells us that there is no way for any man to go around the town. We must all either be strong enough to go through it or get stuck in the mire and be one of the citizens, thereby losing all we have spent years in attaining. There seems to be no way yet found for a man to conceal his vanity—the most ignorant negro can spot it—in fact. that seems

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to be the main object in vanity—to strut yourself before all with whom you come in contact, and that is what makes vanity so obnoxious to your friends and associates. If the individual could be content to "swell up" only in his own mind, and enjoy his vanity all by himself, it would not hurt him among his friends and business associates; however, the main object in vanity seems to be to yell out, "Look at me! I'm a big shot", and that, of course, is disgusting to your friends and therefore works untold injury to you and your business efficiency. In many cases it turns friends into enemies, who say, "O. K., smart guy, if you think you are such a big shot we will do all in our power to throw all the difficulties we can in your path."

This reasoning is true in every walk of life, business and personal, and is the great problem that prevails in baseball, football, and other sports where a number of men are supposed to "pull together" for a common goal. If the "star" (the outstanding player) gets "high hat", and lets his vanity begin to stick out, the coach knows he is up against a problem to get the honest support of the other members of the team. Just as the man who can "star" on a baseball, football, rowing crew or any other capacity, and retain the undivided support and loyalty of the other members knows human nature, so also is the overseer or superintendent, or business man in any other line of work who, when he becomes a "star" can retain the undivided support and loyalty of his associates.

(To be continued)

Dirty Reed Marks on Rayon Fabrics

EDITOR COTTON:

This is in answer to the question by "CONTRIBUTOR No. 6925" on page 105 of the August issue of COTTON. He is having trouble with dirty reed marks when using steel reeds on his rayon goods, even though he brushes the reeds every time he doffs the cloth.

Filament rayon is much harder on a reed than cotton or spun rayon. Some types of filament rayon will wear a reed beyond further use while weaving only one warp out. The oily substance this man mentions is in the yarn when it arrives at the mill. I don't know just what the substance is but it is left in the yarn from the processing in the rayon plant.

When a reed begins to be cut by the yarn, this oily substance is mixed with fine particles of steel which are worn from reed dents. Thus, it is obvious that this "necessary evil" will be with us for quite some time, if it does not remain with us as long as we weave rayon.

"CONTRIBUTOR No. 6925" mentioned the fact that he has his reeds cleaned with a cloth and brush every time a cut of cloth is doffed. It is evident that his reeds are not being cleaned thoroughly because the dirty reed marks appear again in a short time. I think he will get better results if he will clean his reeds every time the cloth is doffed and proceed as follows:

Take off the reed cap and remove the reed from the reed seat. Wash the reed thoroughly with white gasoline, using a brush and cloth. Work the reed up and down in the warp as far as it will go each way so as to clean the dents thoroughly. Then move the reed back and forth over about a quarter of yard of warp, rubbing the extreme top and bottom of the reed in the warp while doing this. Of course, it is understood that the small knots or balls of waste that form on the warp behind the reed will be pulled through the reed before it is washed.

When using this method of cleaning reeds, the warp will be real dirty where the reed was washed, but the cloth can be cut at this place so as to allow a minimum of waste to be made. I think it is much better to concentrate this dirt in one spot and waste a quarter to a half yard of cloth on the end of each cut rather than have dirty reed marks scattered all through the cloth.

CONTRIBUTOR No. 6931

EDITOR COTTON:

In answer to "CONTRIBUTOR No. 6925", who is having trouble with dirty reed marks, I would say that evidently he has a dirty shuttle or dirty loom box which permits the dirt to collect on the shuttle and rub off on the warp, and when the reed picks this up it is continually whipped on the warp. If he is using a plain wood shuttle, no doubt he is using one that has been oiled.

This man may have his boxes lined with leather, which possibly has various kinds of oil impregnated into it. This oil blackens and becomes dirty through an oxidation method or from dirt flying in the air collecting on the oiled leather.

We have found it best to use a non-oiled and non-lacquered smooth shuttle and to use leather that is of a dry chrome tan.

Should "CONTRIBUTOR No. 6925" have dobbies or Jacquards it is possible that this dust is falling down from the top. Overhead dirt or lint from various parts of the mill will cause considerable trouble. Also, he may be oiling his reeds with the wrong kind of oil, which collects dirt but does not show up until after three or four hours of running.

CONTRIBUTOR No. 6932

Insulation Cleaning

Keep electrical apparatus clean and dry. Operating instructions provided by manufacturers emphasize the importance of keeping electrical apparatus clean and dry. In spite of favorable locations, suitable enclosures, adequate ventilation, drip-proof covers, splash-proof protection, electrical apparatus does get dirty and insulation must be clean.

The methods of cleaning insulation include wiping off the dirt with a "clean dry cloth"; blowing it out with air pressure; draw it off with suction apparatus; removing it in various ways with solvents; and washing it off with water—sometimes hot water and a solvent are required. The method will depend upon the type of apparatus and the conditions involved.

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CONTINUED ON PAGE 114

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Continued from Page 113

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355. Air Conditioning in Cotton Spinning—A technical discussion of the need of adequate humidification and controlled air change in the spinning room of the textile mill of today. Ask for Bulletin 539. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, North Carolina.

356. Parks Textile Specialties—A 14 page bulletin with brief descriptions of the Parks line—Automatic Airchanger—Central Station and Unit Air Conditioners—High Duty, Turbo and Turbomatic Humidifiers—Automatic Regulation—Traveling Cleaners—Portable Dustless Card Stripper—Humidifier Valves and Accessories. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, N. C.

357. Caro-Gant—The Original 100% Active Warp Dressing. Attractive folder describing Caro-Gant the Warp Dressing that makes stronger more elastic warps with a maximum breaking strength and a minimum reduction in elasticity. Hart Products Corp., New York City.

358. Rhonite Emulsions—Attractive bulletin describing the Rohm & Haas complete line of Urea Formaldehyde Resins for Textile Finishing, Rohm & Haas Co., Philadelphia, Pa.

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360. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco paper carriers, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

361. Thaumaphos — The textile detergent — Seven page booklet describing Thaumaphos, the wonderful phosphate. Included is a list of the Thauma brands and a survey of their uses in the wet finishing of textiles. Detergent Products Corp., Atlanta, Ga.

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64. SKF in the Cotton Mills—24 page bulletin describing bearing installations for practically every machine in the textile industry including roller bearing spindle and tension pulley. SKF Industries, Inc., Philadelphia, Pa.

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77. Bulletin S 200—Illustrating and describing the new Reeves variable Speed Drive for spinning and twister frames, explaining its many distinct advantages and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

110. 3-in-One Oil for Industrial Uses—showing the many industrial uses and advantages of this oil. A. S. Boyle Co., Jersey City, N. J.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch and its many advantages. Drake Corporation, Norfolk, Va.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

128. Houghton's Hand Book for the Hosiery Dyer—This book contains the result of 69 years of experience in research and development of processing materials for the textile industries, together with a wealth of other data useful to every hosiery dyer. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

139. Textile Detergents—Theory of the use of alkalis and control of pH—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergent in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

141. V-Belt Engineering Data Book—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

154. Johnson Bronze Bulletin No. 340—showing over 800 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. Link-Belt Catalog 1574 on the P. I. V. Gear—giving details of this positive variable speed control. Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill.

156. Link-Belt Engineering Data Book No. 125—showing features and giving engineering data on Link-Belt silent chain drive. Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill.

157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors—Maple Flooring Manufacturers' Association, 1794 McCormick Bldg., Chicago, Ill.

163. Roto-Koner—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, P. O. Box 1605, Providence, R. I.

164. Johnson Rotary Pressure Joints—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

168. The Tube-Tex for Tubular Knit Goods—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

170. Gates Textile Accessories—showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colo.

171. Design of V-Belt Drives—48 page booklet full of valuable tables and data showing the type, number and design of V-belts that will give the greatest efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

176. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

184. Speed Control Handbook T-35—new reference book in variable speed control, said to be the most complete and helpful book on this subject ever published. 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind.

185. Dulux—The White Finish That Stays White—New book describing the new ten-point finish for factory walls and ceilings, the finish that stays whiter, stays cleaner and stands repeated washings. E. I. du Pont de Nemours & Co., Finishes Division, Wilmington, Del.

187. The Wildman Single-Head Full-Fashioned Hosiery Machine—Literature on request from the Wildman Mfg. Co., Full Fashioned Division, Norristown, Pa.

188. Form 496—This form enables you to gather your own cost data on your sewing machines and determine whether new Union Special Machines will show big savings. Furnished free by Union Special Machine Co., 400 No. Franklin St., Chicago, Ill.

COTTON, Grant Bldg., Atlanta, Ga.

Please send me, without obligation, free booklets described in the November 1939 issue of COTTON.

(Fill in here numbers you select from both page) .....

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Firm Name ..... Position .....

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List Items You Want and Tear Out and Mail Coupon Now!

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Please be sure to fill in your Firm's Name and your Position on the Coupon. This service cannot be extended to you unless this information is furnished.

Refreshing!

The difference between hard and easy work

Working on equipment that has been designed around the operator's most comfortable position can be almost a pleasure in contrast to working on a machine that has been designed with the worker as a last consideration.

The Proctor & Schwartz Boarding Machine (whether for women's hosiery or men's socks) is a piece of equipment that was actually designed to assure the "boarder" perfect ease and comfort while working. It also provides for maintenance of highest quality results at the highest production. It thus enables the boarder to increase his or her earnings while bringing important savings in time and money to the manufacturer or finisher.

32 dozen pairs per hour for women's hosiery and 52 dozen pairs per hour for men's half-hose are the possible productions for these two-operator machines . . . whether full fashioned or seamless hosiery, light, medium or heavyweight.

And the prices of these machines are such that they assure the buyer a substantial return on his investment.

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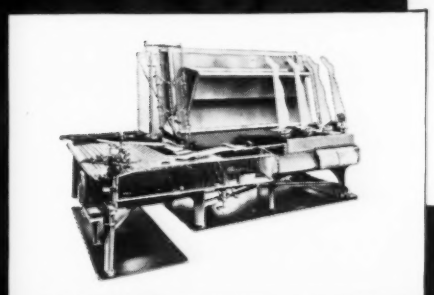
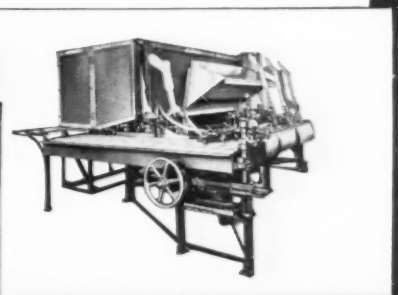


Automatic Machine for Women's Hosiery 11½ feet wide by 9½ feet deep.

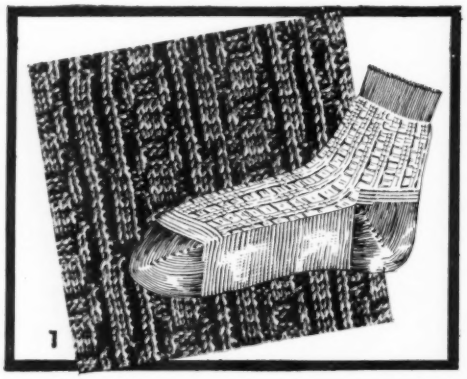


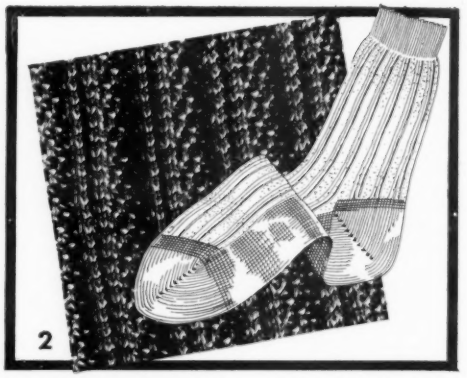
Automatic Machine for Men's Half Hose 10½ feet wide by 9½ feet deep.

Proctor & Schwartz BOARDING MACHINES

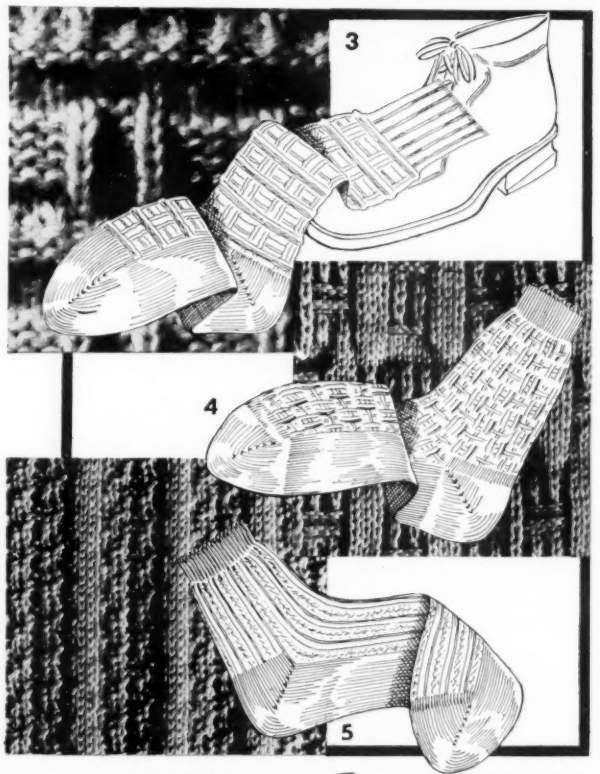
KNITTING CIRCULAR

Bit news of the month in men's hose is the appearance of many new and striking designs and color effects in Links-and-Links items. This type of hosiery is livening up the market as no other merchandise has done in many a season. Stores and shops throughout the Metropolitan area in New York are promoting it energetically. Following are some of the Links-and-Links styles being featured for fall and winter wear—and for the coming spring and summer seasons.



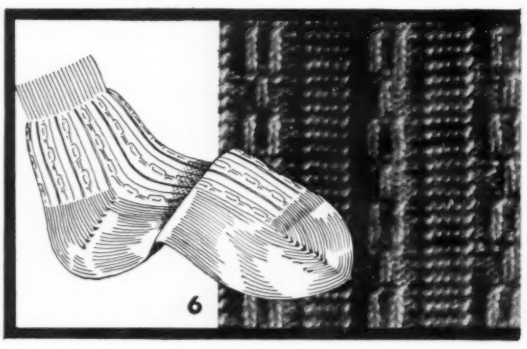


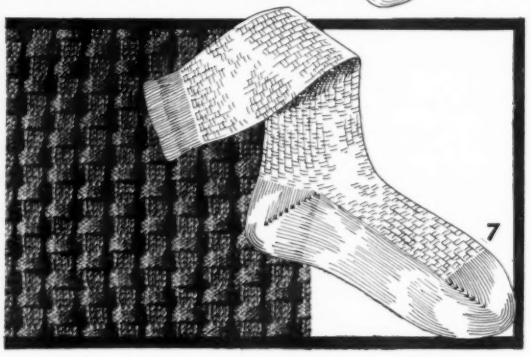
Shown here is one of the many new handsome two-tone Links-and-Links effects. In this sock ribs are spaced wide apart, against a background of bright red-blue. Many shops and department stores are featuring the two-tones in this way—and doing a brisk business. Now, there is still another Links-and-Links development in the offing. This is the three-tone effect. Here three colors, plus a great variety of patterns and ribs are combined to create effects that are entirely new and novel. Shown here is one that has widely spaced double ribs on a speckled background of bright red and blue which gives the sock a striking, almost iridescent luster. Three tones are bound to be popular, and the Knitting Circular calls your attention now—while the field for development is wide open—to the tremendous possibilities they offer your mill for future business.



Links-and-Links hosiery is featured—and featured heavily—in the Suit, Sock and Shoe Wardrobe section of Apparel Arts for September. Here it is suggested not only for town and country during the present season but for ski and northern resort wear—and in light weight numbers for resort wear next spring and summer. First shown is a heavy wool full-length ski sock in natural color. This is very similar to the ski sock featured in Apparel Arts. Next are shown two summer resort Links-and-Links socks that are also very similar to two patterns suggested in Apparel Arts. One is a green and white basket weave type; the other is a plain yellow sock with narrow ribs between which is a mesh-like design.

The assistant buyer of children's hosiery for a leading Fifth Avenue store chose the two socks shown here as outstanding examples of children's Links-and-Links merchandising successes. One is a knee-length basket weave sock. The other best seller from this store is a lisle, angora and rayon anklet in natural color.





The Scott & Williams Links-and-Links Komet Machine is the machine that gives you *all* of this sales-producing, market-building merchandising.

SCOTT & WILLIAMS, INC., 40 Worth Street, New York, N. Y.

Established 1865

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

KNITTING SECTION

Full-Fashioned Sole Trouble

THE FOLLOWING is a recent inquiry received by the editors of COTTON: "We are having some trouble with small loops of thread in the sole on our footing machines. We are enclosing samples and would appreciate information as to the cause and how it may be remedied.

"This stocking is made of Bemberg yarn in the part where our difficulty comes. When we look at the loop through a glass we feel that loop is a part of the needle stitch, but was unformed in the stitch. Possibly it did not get under the beard."

The samples were forwarded to several men and their answers as given to COTTON are contained herewith as follows:

EDITOR COTTON:

The partially dropped stitches which appear in the sole of the Bemberg foot under consideration definitely indicate a slackness or looseness of the loops while in formation at what is known as the dividing point of the stitch formation.

At this moment the loops are not held taut enough between the sinkers and needles and consequently the loops, especially those of the heavier reinforcing yarn, do not slide under the open beards, but rather here and there escape the beards, leaving the partially dropped loops as appear in the sample fabric.

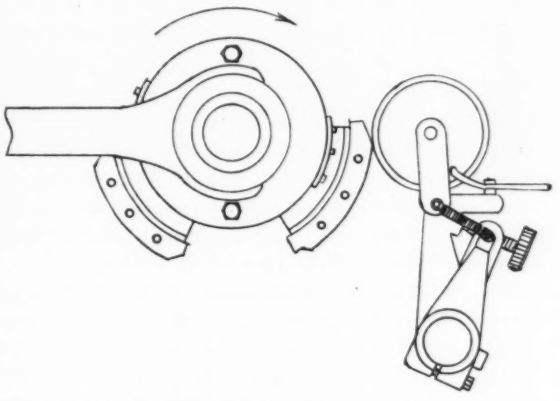
To overcome the difficulty it is first necessary to determine which of the motions are at fault and this can only be done by checking the settings of the various motions involved.

In most cases it will be found that the dividing can be increased sufficiently to hold the loops firm by making an adjustment on the regulator cam. Inserts are placed on this cam for the purpose mentioned above, but it is advisable to check the timing of the cam before moving any of the inserts. It may be found to be early with the cam gauge.

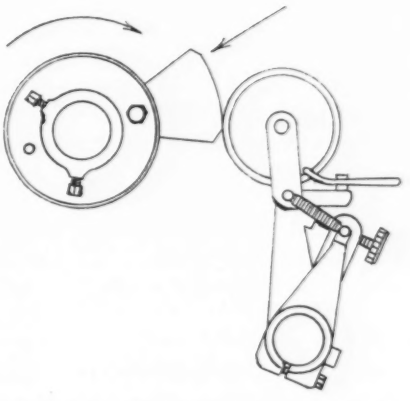
If the catch bar is too far back or timed too early the same effect will result as indicated. This is an important motion to check thoroughly. Again the trouble might be in the needle adjustment, known as the press setting. The needles may not be close enough in relation to the catch bar motion or the presser cams could be timed too late. It is not advisable to change any of these motions if they are found to be standard as the condition can be corrected by locating the true source of difficulty.

This condition is quite common where an extreme amount of rocker is needed and the yarn is of such a nature as not to lend itself snugly around the shanks of the needles. When the yarn is very soft and pliable such a condition will not exist. Hence, dropped stitches of this nature may not be present on all types of yarn on the machine in question.

Increasing the pressure at the dividing point in the sole is not always advisable, as this may create too much pressure at the same point in the toe. When extremes of yarn weight are used in the instep and toe it may be better to have a different dividing point for each por-



Progressive rocker assembly, rocker arm and roller. At this point roller is dropping off of cam at end of coulier stroke. This point will vary according to position of crade attachment . . . . . .



Auxiliary rocker assembly showing point of contact in relation to progressive rocker. This roller must make contact before other rocker is released at widest portion of cradle. Arrow shows critical point of cam to be adjusted to provide sufficient dividing in sole portion of fabric . . . . . .

tion of the foot. This will be explained in the next paragraph.

If all the motions are found to be correct and no adjustment can be made to increase the dividing during the knitting of the sole portion, the insertion of an additional cam which will hold the needles from moving backward after the rocker movement is completed will be found to remedy the difficulty. An arm, similar to a rocker arm, complete with roller is to be placed on the regulator shaft together with a flange on the cam shaft, located as close to the regulator cam as possible. This is to prevent any undue torque in the regulator shaft between the two cams.

Now place a small rocker cam on the flange in such a manner that it will hold the regulator shaft in the same position as the rockers, but for a longer duration, until a point is reached where the catch bar is sufficiently forward to warrant releasing the regulator shaft and permitting the press cams to control the needles from that point on to the completion of the stitch. The cam should be of sufficient height that by an adjustment of the new roller the same setting is acquired as the amount of rocker in the sole. The moment of contact between the roller and cam is not important, anytime after the progressive rockers are in action on the latter half of the slur bar stroke. However, the moment of release is of greatest importance and must be timed as stated previously.

The whole principle involved is to give more dividing during the sole portion of the foot without increasing it in the toe. It will be readily understood that the moment the regulator setting is changed for the toe, this auxiliary cam will be automatically out of action in the same manner that the rocker cams do not make contact with the rollers during the knitting of the toe. Hence, there is no need to move the roller away from the cam at any time.

CONTRIBUTOR NO. 6960.

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EDITOR COTTON:

The loops and distorted stitches as shown by the samples submitted are caused, in our opinion, by low beard needles and lack of proper adjustment of yarn tensions.

This trouble almost invariably develops when and where machines have been in operation for some time on lighter yarns and lighter fabric, and then changed to heavier constructions.

We notice two conditions of the loops, one where one of the threads has been entirely missed by the needle beard while in the act of forming the loop, and another where the filaments are split by the beard taking under and into stitch formation part of the filaments and casting off part, producing a tucked or puckered condition of stitch.

To correct the trouble it will be necessary to isolate the offending low beard needles and lift the beards. It may be found advisable to slightly lift the beards on all the needles in the machine. Then, careful adjustment of tension so that splicing yarn and main yarn are held closely parallel while being drawn into the needle, should, in our opinion, correct the trouble.

CONTRIBUTOR NO. 6963

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EDITOR COTTON:

The party having trouble with small loops in the sole of the foot states that he uses Bemberg yarn for splicing in the sole of the foot and the loops appear as if the thread did not get under the needle beard, thereby not forming the stitch.

I have carefully examined the two samples, submitted to me showing this defect and the defects are only in the cradle of the foot, so I assume that this is the only place in the sole where he has the trouble.

Years ago when ingrain hosiery was manufactured on full-fashioned hosiery machines, this trouble of loops which we would call small fly outs was a common trouble. It would only occur in the high splicing of the heel on a legging machine, or the sole of the foot on a footing machine. Soft yarns such as ingrain and rayon yarns have a tendency to "fly" out of the throat of the sinkers and dividers, especially if the yarn is too dry, and the result is that small loops are formed that sometimes are mistaken for blind stitches or half stitches caused by closed needle beards.

As this mill is using a Bemberg yarn, I will endeavor to help overcome the trouble by relating what we would do if a machine gave us this trouble when we were manufacturing ingrain silk hosiery.

I believe the contributor will agree with me that this trouble never occurs in the plain fabric but always occurs when the rocker motion is in operation. When the rocker motion is put into operation the sinkers have a tendency to fly back and when a soft yarn is used the thread will fly out of the throat of the sinker or sometimes the looseness of the thread caused by sinkers flying back in the rocker motion will result in the nose of the divider catching the thread and not allowing it to enter the throat of the divider because the thread did not remain tight in the throat of the sinker.

The first thing one should do when this trouble occurs is to examine the slurcock noses and see if they are worn. Worn slurcock noses cause uneven drawing of sinkers and results in the sinkers flying back expecially in the rocker motion. In using soft yarns, the slurcocks must always be in the best of condition.

Check the rocker motion and see if less rocker can be used so that the needle bar does not rock too much. The less rocker used the less danger of throwing loops.

Also check the rocker cams and rollers, especially at the point where the roller enters or leaves the rocker cams. If the rollers enter or leave the cams too abruptly, this causes the needle bar to go back and forth too suddenly and will cause the sinkers to fly back. As much tension as possible must be kept on the Bemberg yarn thread used for splicing so that the yarn is held firmly at all times in the throat of the sinker and the divider when the dividing operation occurs.

All sinker heads should be checked to make sure that there is not too much play in the sinkers. It is always better to have them a little on the tight side when using soft yarns.

Run the catch bar motion as light as possible or in other words do not have too much catch bar on the sinkers.

The carriers should be set between the sinkers as deep as possible so that the thread will lay

down closer to the sinkers as the thread draws across the sinker head.

Examine frictions to be sure that they are drawing the carriers evenly across the sinker head and do not jerk across as this would cause a back lash of the thread. The coulier or as some call it "the draw cam" motion should also be checked to see if this is worn or has too much play.

As stated before the small loops appear in the cradle sole of the foot and as this is the point where the rocker motion does its hardest work, this is where one must look for the trouble. Watch the action of the sinkers during the rocking motion, while making the cradle sole and watch the yarn action at this point and I am sure that it will soon be seen what causes the trouble of loops and it will then be an easy matter to make the necessary adjustments to correct the trouble.

C. H. BAXTER

Belt Slippage and Production

EDITOR COTTON:

In this age of rushing and scheming to get the most out of our knitting equipment, I am afraid that we are looking too much for big things to do to increase production and are passing up a lot of smaller things that, added together, would make big things.

The other day the writer started out through the mill in search of some little things that would increase production, having in mind that most of our machines were running as fast as the machine builders would recommend.

We have one set of very expensive machines from which our production is always sold up and we sometimes have to turn down orders on these machines. The machines were built to run about 180 r.p.m. and on checking the first machine in line I found that the speed was exactly 180 r.p.m. so I thought there was nothing that could be done to speed up production on these machines, unless we just speeded up the drive shaft and we knew that would only mean more waste and needle breaking.

As I had given up and started to leave the aisle, I noticed that one machine seemed to be running quite a bit slower than the first machine that I checked. I then checked the second machine and found that it was running only 156 r.p.m., and it was on the same line as the other machine and was being driven by exactly the same size pulley, and this could mean only one thing—the belt was slipping. I found that we were using a single belt of medium price and it was not the type belt for the heavy machine that it was driving. We have tested a belt which is 2-ply, the driving side being chrome tanned and the outside being oak tanned, and the results have been wonderful. We think that the chrome tan is the best for pulling and the oak tan will not stretch near as badly as the chrome tan, so the combination is exactly what we want. Our machines are very heavy and the single belting is simply too light for the job.

There are 25 machines in this line and we run them three shifts and get a production of about 240 dozens per 24 hours. On checking all of these machines for speed we found that they were running from 156 to 180 r.p.m., and a conservative estimate would indicate that we are losing 5 per cent production which we can gain simply by getting the full 180 r.p.m. on all of these machines and they will run this speed efficiently. A 5 per cent increase on a production of 240 dozens per day would mean 60 dozens increase per week and that without jeopardizing the efficiency of the machines because some of them are already running 180 r.p.m.

It is barely possible that the same condition exists in a lot of other mills. We just buy any kind of belting at a price and we don't follow it up to see if it is giving us the maximum of efficiency, and whether we get 80 or 100 per cent efficiency our fixing cost and all other indirect labor costs go on just the same. In these days of keen competition, a 5 per cent increase in production will certainly help you stay in the running.

This is only one of many possibilities of speeding up production and thereby cutting down costs.

CONTRIBUTOR NO. 6977

An Eye on the Knitting Mills

Dolly Hosiery Mills, Inc., Valdese, N. C., has been granted a charter to manufacture hosiery and textile fabrics, with an authorized capital stock of $25,000. Incorporators are Laird Jacob, J. F. Verreault and J. A. Verreault, Jr., all of Valdese.

A new full-fashioned hosiery manufacturing plant will be established at Union, S. C., by E. F. and H. P. Hartman. The plant will be located in the Kennedy building. Eight high speed knitting machines will be installed.

Galax (Va.) Knitting Company is installing new seamless hosiery machines and auxiliary equipment at a cost of about $50,000. An addition is being built which will provide about 6,000 square feet of floor space.

Harriman (Tenn.) Hosiery Mills is constructing a new 3-story addition costing about $100,000, which with equipment will provide working facilities for 300 new employees.

Standard Knitting Mills, Knoxville, Tenn., will construct a $25,000 addition to provide more warehouse space. The new structure will adjoin the present warehouse.

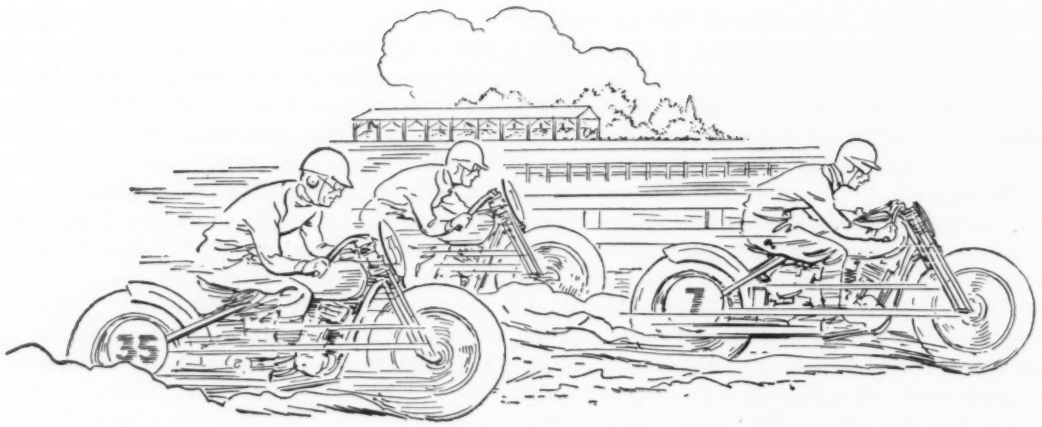
W. R. Spivey, owner of the Waldridge Knitting Mills, Helena, Ark., has purchased a building in that town, and the mill will move there and occupy larger quarters.

P. H. Hanes Knitting Company, Winston-Salem, N. C., will build a 7-story brick and steel building to be used for storage and shipping purposes.

Elizabeth James Mill No. 2, Marion, N. C., has remodeled a building adjoining the plant and is using it as a dyehouse.

Midvale Knitting Mills, Hackensack, N. J., has been granted a charter with 2,000 shares of no par common stock.

Homesteads Hosiery Mill, Crossville, Tenn., is now in operation.



As the race for profits in the making of full-fashioned silk stockings becomes more and more a race for *technical superiority*, the demand for "T M W" Needles (and the service back of "T M W" Needles) shows a strong and steady increase.

"T M W" NEEDLES

TEXTILE MACHINE WORKS, READING, PENNSYLVANIA

"He that will not sail 'til all dangers are over must never put out to sea"
OLD PROVERB

In a 40-hour week the new READING high-production twenty-six section forty-five gauge full-fashioned knitting machine produces 97 per cent more volume and 116 per cent more value than the ordinary eighteen-section forty-two gauge machine.

TEXTILE MACHINE WORKS • READING, PA.

KNITTING KINKS

Operating and Fixing of S. & W. Model ES Machines

(Article 8)

By Emmett Starr

THIS is the eighth article* in a series concerning the care, operation, and fixing of the Model ES machine. The series is written with the assumption that the reader has before him a copy of the S&W catalog of parts pertaining to this machine so that he can follow each Plate as mentioned in the article. Save your copies of the magazine so that you will have the series complete. Should you wish any particular phase of fixing discussed, the author will be glad to do so upon request through the editors.

THE GAP CLOSER THRUST BAR on the ES machine (13435), Plate 21, is practically the same as that used on other Scott & Williams spiral machines. The lower end of the bar is in the sixth slot of the lower guide plate and the upper end in the first slot of the upper guide plate. The bar should work freely in the guide plates, either when being raised or when dropping off the drum cams.

A binding bar can be caused by several things; the edges of the bar not smooth or too sharp on the ends that slide in the guide plates; the end of the bar being too thick or too wide for the guide plate slots; the bar not bent properly; lint, dirt, or other substance accumulating on the bar or falling between the guide plates and the bar; the guide plates not fastened tight so that they become loose and perhaps tilted.

On the upper left side of the thrust bar below the upper guide plate is the sinker slackening cam (7040), Plate 21, and just below this cam is the gap closer plate (7034). Both the cam and plate are adjustable. Whenever it becomes necessary to adjust the cam or plate, make sure that they are securely fastened in order that they will maintain their position.

When making the high splice and double sole the thrust bar is raised by the drum cams so as to allow the sinker slackening cam on the thrust bar to rest against the sinker slackening cam (13577), Plate 20, located on the sinker cam ring (5316). When the slackening cam on the thrust bar is set too far forward it will bind on the slackening cam on the sinker cam ring, not allowing the thrust bar to act freely. During the heel and toe process the thrust bar is raised higher so the gap closer (14809), Plate 24, will be in action. After the completion of the heel or toe, the bar is not likely to drop, as the slackening cam on the thrust bar may hang on the slackening cam on the sinker cam ring.

The gap closers of the ES machines are different from those on other Scott & Williams machines. The closer is held down in the channel between the latch ring and the latch ring insert (11999), Plate 24, by the gap closer retainer (14789) and should slide easily in the channel. In the event that the gap closer binds, it may be due to lint or other matters getting in the channel, or that the retainer is pressing too hard on the closer. Polish off all nicks and burrs on the gap closer.

The gap closer link (300093), Plate 24, connects the gap closer and the gap closer lever (100257), Plate 10. The end of the link that is connected to the closer is guarded from being disconnected by the gap closer hold-down (200065), Plate 24. When the gap closer is forward, or rather in action during the heel or toe, the hold-down should be directly, or nearly so, over the gap closer rod pin (300018), Plate 24, so as to prevent the link from slipping off the pin. The hold-down when set should not rest on the gap closer rod pin at any time; that is, when the gap closer is either in or out of action, as this is likely to impede the action of the closer from dropping back out of action so that the yarn finger or fingers can drop into position and the heel and toe finger can be withdrawn without coming in contact with gap closer.

The other end of the link, connected with the gap closer lever, is held in place by the gap closer spring (6608), Plates 10 and 24. There is no need for this spring to be too strong, providing that the gap closer thrust bar or the gap closer are not binding. The spring being too tight or too short is apt to break more readily than a spring that is just strong enough to pull the gap closer out of action when the thrust bar drops off the drum cam.

The gap closer hold-down is held in place by the gap closer hold-down pin setscrew (15274), Plate 24. Make sure that this screw is tightened so that the hold-down will be held securely and not get out of position when getting a jar or bump. Another reason that the hold-down gets out of position is that it has become loosened on the hold-down pin

*The first article appeared on page 108 of the August issue, the second on page 123 of November, the third on page 112 of the December 1938 issues, the fourth on page 106 of January 1939, the fifth on page 103 of the March 1939, the sixth on page 103 of the July, and the seventh on page 124 of the August issue. Thus far discussed are the upper guide plate, the gap closer shaft, stitch cam operating levers, stitch regulating lever shaft, pattern drum, pattern drum friction, drum levers, clearing cam thrust bar, front raising cam, thrust bar and guide plate, and pattern pushout cam; besides many other important points.

ALL ~ AMERICAN

Durene — Football Jerseys

Here is a test of quality and strength that is easy to understand...the new *Durene* football jerseys you will see this year are chosen because *Durene* Yarn *absorbs* and *evaporates* perspiration faster—is therefore cooler—cleaner.

American Super-Mercerized *Durene* is tops among cotton yarns—and the same high quality that makes it good for football jerseys holds for the whole athletic uniform field and men's, women's and children's underwear—men's and women's hose.

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YARN AND PROCESSING COMPANY
MOUNT HOLLY N. CAROLINA

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222 West Adams St.	735 Chestnut St.	Mallory Street	40 Worth St.	1600 Arch St.	Johnston Building

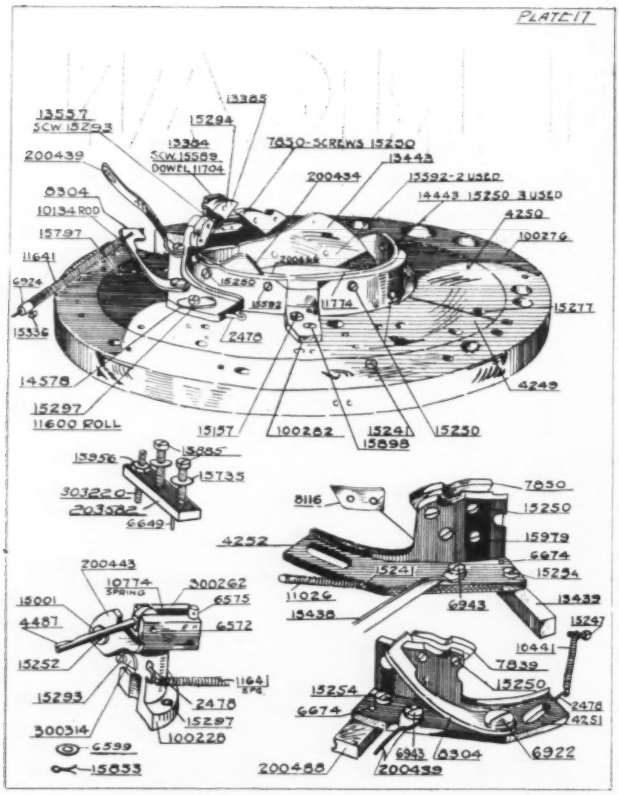


Plate 17 in the Model ES Catalog of parts. This plate as shown is slightly different from the Plate 17 shown in the 1st, 2nd and 3rd editions of the catalog, as the above Plate was prepared for the new edition soon to be available . . . . .

(11973). The hold-down is pressed or riveted to the pin, but the continuous pulling and pushing of the hold-down, in trying to set same without loosening the setscrew, will soon cause the hold-down to become loose on the pin. When this happens, the hold-down is apt to swing to one side, leaving the gap closer link unguarded; the link, being left unguarded, can easily slip off the gap closer rod pin when the gap closer is going into action or while in action. In the event that the link becomes disconnected from the gap closer while in action, the closer will not drop back at the completion of the heel or toe thereby not allowing the heel and toe yarn finger to be raised or withdrawn without coming in contact with the gap closer. Whenever the heel and toe finger, when being raised, comes in contact, binds or pushes against the gap closer, various kinds of trouble will develop such as bent or broken heel and toe thrust bar, knocking the drum cam which controls the heel and toe thrust bar from the main pattern drum; perhaps forcing the main pawl plate out of adjustment, causing the main drum to be out of time.

A broken gap closer spring will also cause the gap closer from dropping back when the gap closer thrust bar has dropped off the drum cam at the completion of the heel or toe, thereby causing the same difficulties that are encountered when the gap closer link has become disconnected from the gap closer rod pin.

Practically all of this trouble can be avoided by periodical check-up and also by loosening up on the setscrews when making an adjustment; but do not fail to tighten them after the adjustments have been made.

Free or non-binding yarn fingers and yarn finger thrust bars are of great importance when making the various yarn changes. All the yarn finger thrust bars must be free in the slots of the upper and lower guide plates in order that they will drop by their own weight when dropping off the drum cams, allowing the fingers that they control to drop in position when making the yarn changes. Bars that are binding will cause a slow action of the yarn finger, thereby making imperfect yarn changes, and perhaps not allowing the finger to drop at all. In that case the parts of the sock which have been made will be pressed off the needles.

When having difficulty with the thrust bars not dropping freely, check the guide plates, make sure that they are fastened securely and that no upper guide plate walls (12129), Plate 10, are bent, broken or have fallen out and that no dirt, lint and other particles have accumulated in between the bars and the walls of the guide plates. Bars not bent at the proper angle will cause them to bind. It will be necessary to re-bend the bars until they work freely. If the edges of the thrust bars are sharp they should be rounded or beveled slightly, especially that part of the bar that slides in the slots of the guide plates. This will help considerably in aiding the bars to drop freely.

When the front or rear end of the drum cams have become worn it is caused by the bottom edges of the thrust bars being sharp. These edges should be beveled off. If the drum cams are too badly worn it would be best to replace them. The upper end of the bars should be directly under the finger that they control and not bent over to one side. A bar bent to one side will have a tendency to interfere with the next finger not allowing it to drop and may cause the other fingers to bind.

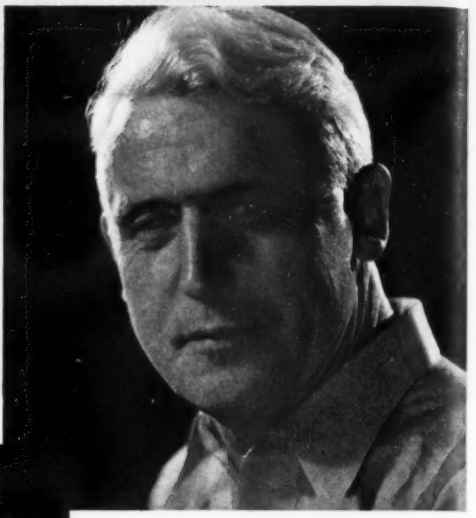
The thrust bars should be long enough so that when resting on the drum cams, when making the heel or toe, they will lift the yarn fingers high enough that when the gap closer goes into action it will not come in contact with any of the fingers that are raised. In the event that the gap closer does come in contact with any of the fingers it is likely to damage the closer, force the gap closer plate on the gap closer thrust bar out of position, the machine may be held fast, and other minor or serious troubles may develop. There are several ways of eliminating this difficulty: if the bar is not too short the necessary length can be obtained by beating the bar (do not strike the bar on or near the upper or lower end as the ends of the bar are hardened and are apt to break off when hit with any force); the yarn finger can be ground away where the closer strikes it, just enough so that the finger will not hinder the gap closer from functioning; the drum cams should be inspected; if worn, or not the regular height, they should be replaced; if any of the thrust bars are too short it is best to replace them with longer ones.

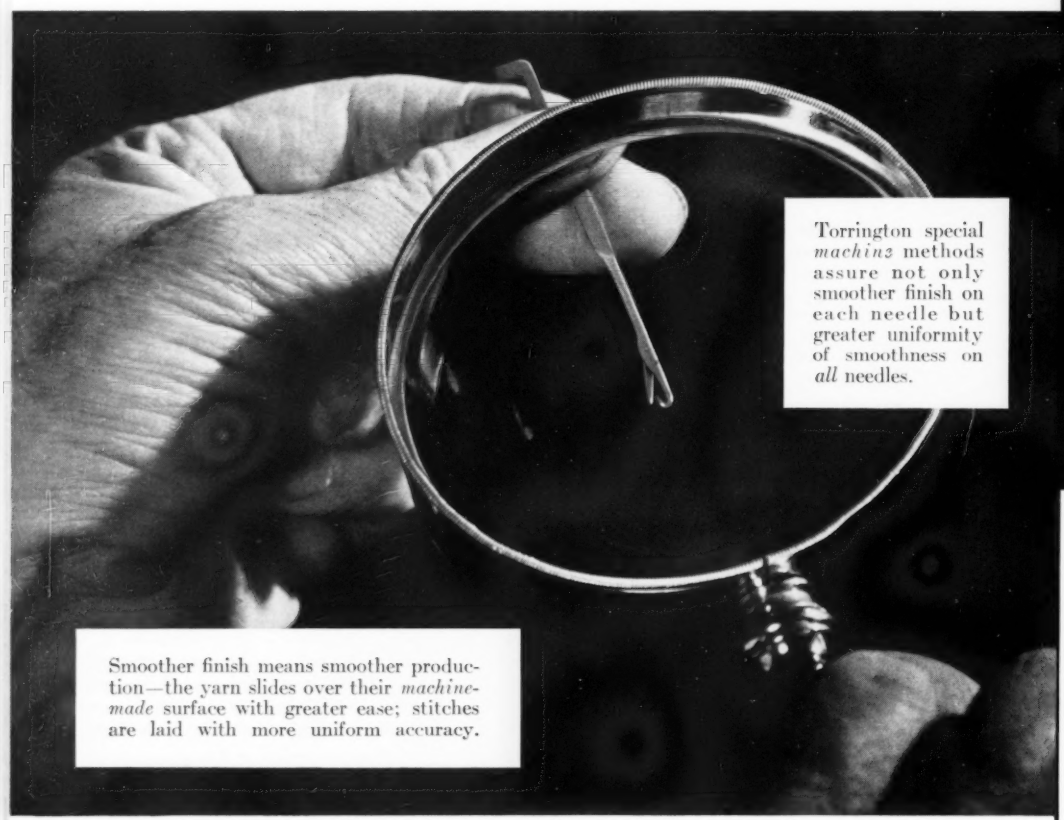
"SILKEN LOVELINESS"..."RUGGED STRENGTH"..."MILES OF STURDY WEAR"

How manufacturers can produce hosiery that looks so beautifully sheer yet has that "on-again, off-again, wash-again" durability demanded by women is a puzzle to many people. It represents many years of painstaking work on the part of the hosiery industry. New and better yarns have gradually been developed. Processing equipment and knitting machines have been improved. Needle quality has been advanced by the special machine-manufacturing methods perfected by Torrington. Fine temper, smooth finish, over-all uniformity in needles are increasingly important factors in hosiery production. Let the *machine-perfected* quality of Torringtons help you keep abreast of the trends.

TORRINGTON *Needles and Sinkers*

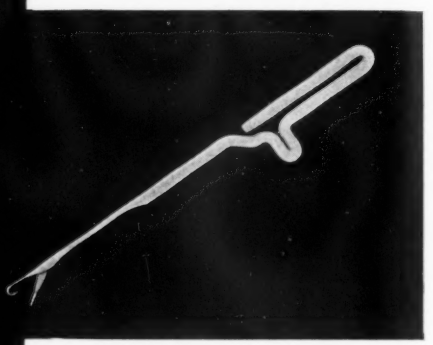
Mill Men Prefer TORRINGTONS
★ *because of their*
"SMOOTHER FINISH, TOO"





Torrington special *machine* methods assure not only smoother finish on each needle but greater uniformity of smoothness on *all* needles.

Smoother finish means smoother production—the yarn slides over their *machine-made* surface with greater ease; stitches are laid with more uniform accuracy.



★ **MILL MEN'S REASONS FOR PREFERRING TORRINGTON NEEDLES**

Proved Best	18.2%	High Quality	12.5%
Best Service	17.0%	Better Temper	9.0%
Best Results	15.9%	Last Longer	6.8%
Most Uniform	14.8%	Economy	2.3%
Best Made	13.6%	Smooth Finish	2.3%
Most Satisfactory	12.5%	Miscellaneous	11.4%

Many of the knitting mill executives surveyed gave more than one reason under the above classifications for preferring Torrington Needles. As a result, the figures for the entire list total more than 100%.

TORRINGTON customers were recently asked by an independent organization, "Why do you use Torrington Needles?" The variety of the answers was surprisingly wide, as indicated by the list shown at the right. Yet users are unanimous in the opinion that Torringtons are superior needles. "Experience proves" . . . "Tests indicate" . . . "Results show" —such statements used throughout the reports express that opinion in no uncertain terms. Especially interesting is the fact that a large number of the mill men questioned replied that they use Torrington Needles because of "Smoother finish."

We know that Torrington Needles have a smooth finish because we have developed special *machine* manufacturing methods that assure smoother finish, but we did not know that so many of our customers are using them for this special reason. Smooth finish is extremely important in needles for all types of knitting. So are fine temper . . . uniformity . . . durability. Torrington *machine* manufacturing and *machine* testing methods assure them all. Use Torringtons for economy and quality knitting results.

THE TORRINGTON CO., TORRINGTON, CONN., U. S. A.

Established 1866

The Torrington Company . . . 1640 Fairmount Ave., Phila., Pa.
The Torrington Co., Inc. . . . 200 Fifth Ave., New York, N. Y.
The Torrington Company . . . 538 South Wells St., Chicago, Ill.
The Torrington Company . . . Guilford Bldg., Greensboro, N. C.
The S. M. Supplies Co. . . . 210 South Street, Boston, Mass.
Blelock Manufacturing Co. . . . 913 Locust St., St. Louis, Mo.
E. G. Paules . . . . . Bendix Building, Los Angeles, Calif.
The Torrington Co., Ltd. . . 137 Wellington St. W., Toronto 2, Ont.

Factories at: Torrington, Conn. Orange, Mass. Upper Bedford, Quebec Coventry, England Aachen, Germany

TORRINGTON *Latch Needles*

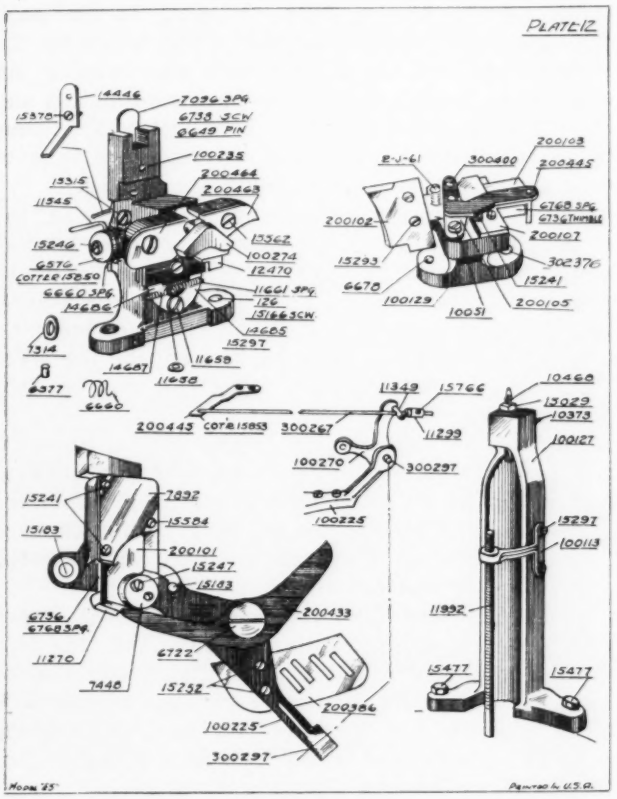


Plate 12, Model ES Catalog of Parts

After checking over the yarn finger thrust bars and finding nothing wrong with them, but the machine is still giving trouble in the yarn changes, that is, one yarn does not enter before the other yarn is withdrawn, it may be due to the yarn fingers not being free. To determine whether they are binding, unfasten the yarn finger springs (300033), Plate 24, from the spring holder pins (11964), Plate 26. If the fingers are hard to raise and they do not drop freely it may be necessary to polish the sides of the fingers; one or more of the fingers not straight, if bowed a trifle, will cause the fingers to bind; if any of the fingers are tight on the yarn finger pin (11988), Plate 24, this will necessitate polishing the hole of the finger through which the finger pin is inserted; remove all burrs from the pin, and when replacing the yarn fingers wipe them clean so that no dirt or lint will be between the fingers. When the fingers are free it is not necessary to have the finger springs too strong or too short, as it will cause too much strain and wear on the thrust bars, fingers and drum cams. The springs should be strong enough so that when the thrust bars drop off the cams the yarn fingers will drop with a snap.

It is unusual but not impossible for the stitch cam brackets (left 4251 and right 4252), Plate 17, not to function properly. The brackets should be withdrawn at the completion of the sock so that the stitch cams will not distort the long butt needles, causing them to become unleveled, thereby making it very inconvenient for the knitter when transferring the top onto the needles.

Butts from needles, jacks and wrap fingers, and perhaps other parts of anything, falling between the stitch cam brackets and the latch ring hinge bracket will obstruct the brackets and prevent them from being withdrawn the necessary distance to clear the long butt needles, and will also put a strain on the various parts that are connected with the brackets, such as, the lower and upper operating bars (200452 and 200453), Plate 11, operating levers (100256), Plate 10, and links (200439), Plate 17, which connected together control the lefthand stitch cam bracket; thrust bar (13463 and upper section 13558), Plate 11, operating lever (5111), Plate 10, and link (13438), Plate 17, control the righthand stitch cam bracket. All screws that are used to connect these parts should be drawn tight. If there is nothing that is holding the cam brackets from going back and you can push them back a trifle with your hand while the operating and thrust bars are resting on the drum cams, it will be necessary to readjust the bars in order to get the required distance for the stitch cams to clear the long butt needles.

When the stitch cam brackets are inserted at the beginning of the sock, they should go in toward the cylinder as far as possible so that the extra short butt needles will be raised by the righthand stitch cam and drawn down by the running down or the lefthand stitch cam the same as the short, medium, and long butt needles. Either of the brackets failing to enter will cause the yarn to load up on these needles that are not raised or drawn down. More serious damage will result when the righthand stitch cam bracket fails to enter at the start of the sock, and fails to drop in at the beginning of the heel and the ring toe, as it is this stitch cam that sheds the stitches off the latches of the needles when knitting these different parts of the stocking.

Failure of the stitch cam brackets to drop into action are due to numerous reasons, as follow: the springs on the bars and the front end of the brackets have become disconnected or broken; accumulation of butts, lint, and dirt in between the brackets and the left and righthand cam rings (4249 and 4250), Plate 17; butts or latches of needles getting under the brackets; the stitch cam bracket slides (left 200488 and right 13439), Plate 17, have become loosened or the edges of the slides are burred or nicked; the stitch cam bracket links (left 200439 and right 13438), Plate 17, not properly bent, and small particles of steel or latches getting between the stitch cam bracket and the stitch cam bracket roll cover (14578), Plate 17.

Sometimes it is a problem to determine where the trouble lies. In that case, it would be best to remove the stitch cam brackets from the cam rings so that all butts and dirt that have accumulated on the cam rings and the bottom of the brackets can be removed.

Before replacing the brackets, check the slides to make sure that the edges are smooth and frictionless and that they are fastened tightly to the brackets. When replacing the brackets, as each part is connected and tightened the bracket should be tested to see that it slides easily before the next part is attached and fastened. After all the parts have been assembled and the brackets slide easily with or

without the stitch cam bracket springs being fastened, you can feel assured that the stitch cam brackets will slide or drop into action when the stitch cam bracket operating bar and thrust bar drop off the drum cams.

The stitch cam bracket roll cover should be fastened so that it will guard elongated opening at all times so that nothing can fall into it, thereby causing the stitch cam brackets not to function properly.

The auxiliary cam lever bar (13375), Plate 21, and the auxiliary cam lever cam (12567), Plate 21, which is fastened to the upper righthand side of the bar, controls the action of the auxiliary lowering cam (200101), Plate 12. This lowering cam is sometimes referred to as the righthand dividing cam or embroidery or wrap needle draw-down cam.

The auxiliary cam lever bar when resting on the drum cams inserts the auxiliary lowering cam. This cam when inserted and properly adjusted should be in far enough to draw down the extra short butt needles whenever they are raised, but should not go against the cylinder. There should be a little play between the cam and the cylinder so there will not be any danger of the cam damaging the cylinder. When this lowering cam is moved in against the cylinder it is also likely to cause the bar to bind, thereby hindering the bar from dropping off the drum cam. Failure of the bar to drop will keep the lowering cam in action when changing to the heel, drawing down the needles that were raised by the switch cam into the stitch cam's way causing the cylinder to become fast on the backward motion and not allowing the cylinder to reciprocate. The same thing will happen when the lowering cam fails to drop out of action when changing to the toe.

When the lowering cam does not go in far enough to draw down the extra short butt needles and no more adjustments can be made on the auxiliary cam button (7448), Plate 12, or on the adjusting screw, if there is any on the auxiliary lowering cam lever (200433), Plate 12, the end of the lever that rests on the auxiliary lever cam can be bent down a trifle.

A broken auxiliary cam spring (6768), Plate 12, will cause the lowering cam from being withdrawn, and a broken or disconnected auxiliary cam lever cam spring (6609), Plate 21, may hinder the bar from dropping off the drum cams in that case the lowering cam will not drop out of action.

The auxiliary lowering cam when withdrawn from action should drop back to clear the long butt needles that are raised when knitting the heel or toe. To avoid a lot of trouble or when having difficulty with the auxiliary lowering cam either going in or dropping out of action make sure that auxiliary lowering cam bracket (100225), Plate 12, is fastened securely to the cam ring.

Employee Suggestions

The man in the mill often has some good practical ideas. Talk to him and encourage suggestions. You'll be surprised at the results . . . . .

EDITOR COTTON:

We all know the benefit to be gained by encouraging the employees in the hosiery mill to offer suggestions on more profitable or simpler methods, but so often we do not remember this. If we could promote suggestions we would be on the receiving end of many ideas that otherwise we would not get.

Some of the following ideas were suggestions made by the employees of some mills that I have worked in, and which the management followed:

Saves Time in Boarding

As the hosiery came from the dyehouse it had to be sorted into sizes and each lot kept separate. This work was then given to the boarders, with each operative being given various sizes to board, from 8½ to 10½. This meant that each operator had to change the tips on the boarding forms, causing a loss in time. One of the employees suggested that one boarder handle only one size instead of all sizes. This was put into effect and production was greatly increased.

Marking Quality of Goods

The stockings in the stock room were boxed, but there was no way to tell whether the goods were firsts, seconds, or irregulars. unless each box was opened. An employee suggested that the first quality goods be marked as regular numerical numbers, as "448", the seconds as "0448", and the irregulars "00448". As the thirds were not boxed there was no reason to mark them. Thus, the style number was kept intact all the time, but the boxes were indicated for the quality of goods. This saved much time in the stock room.

Knitters Hire Oiler

It was the custom in one hosiery mill for the knitters to do their own oiling of the machines and cleaning of the pans under the machines. One of the employees suggested that 25 cents per week be deducted from the salary of each knitter to pay the salary of a man to do nothing but oil and clean under the machines. This was done, and it was discovered that the time saved the knitters was worth much more than the 25 cents that was deducted from their weekly pay check.

Another time a mill had a group of girls that did nothing but loose course their work and turn it over to the topper. Someone suggested that the topper could do this work and save the expense. This was done and it cut down a large expense for the firm, and then the toppers shared in the savings by making a little more for doing this work.

Another employee suggestion that was helpful to the mill was that the work tickets be printed in different colors to identify the various sizes of hose made. For instance, red stood for 8½, blue for 9, brown for 11, etc. This made handling much quicker when the lots had to be selected to go to the dyer.

In some mills this system could be applied to the quality of the hosiery. CONTRIBUTOR No. 6971

Multiple- or Single-Job Finishing Operations

EDITOR COTTON:

"CONTRIBUTOR NO. 6937" has asked whether it is wiser and more efficient to have the single-job or multiple-job operations in the finishing department, that is, have each girl perform only one operation, or more than one. It has been my experience that the multiple system (one operator handling several jobs) is only practical in a small mill where it is an essential method of operation. Small mills have a limited personnel and in order for every operator to have a full week's work, they often have to double up on jobs. These girls must be able to pair, transfer, fold, box, and box-stamp. Wherever there is work to be done, the girl must know how to do it.

Some of these small mills have one girl, or a team of two girls to handle a lot jointly, from the time it is boarded until it is ready for shipping. This means that the team will pair, then transfer, then fold, etc. This, however, is slower than having a couple of regular pairers who only will fold or transfer when they are caught up in their own work. Of course, in a small mill they are bound to be caught up and will then give their attention to what is behind, such as transferring, folding, etc. As the work progresses, one can see that more can be accomplished by the girls co-operating in this manner than by doing the entire finishing operation, girl by girl.

The fastest production method is single job work. If the girl is a pairer, let her *only* pair; if a folder let her *only* fold, etc. Production will be higher. This is the "single line" method of continuous operation employed by the automobile manufacturers. It insures maximum production, as a girl has only one thing to do and with the production geared up, she has to produce, because the department before her and after her are pressing her either way with more work or for more work.

No girl doing several operations can do justice to all. She is usually better skilled at one operation than another, therefore she will produce more at the skilled operation than at the less skilled one. The quality of her work will vary in direct ratio. Also, when one employs single operators for each type of work, the quality will be better because each operator acts as a check and an inspector for the preceding operators' work; this is not possible in a mill having multiple-job operations.

CONTRIBUTOR NO. 6945

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EDITOR COTTON:

Referring to the question asked by "CONTRIBUTOR NO. 6937"—"is it better to have each operative in the finishing room do only transfer work, another to do the ticketing, another for banding, etc., or is it wiser to have each operative complete the job of transferring, ticketing, banding, boxing and labeling on a lot of goods?"

I will try to answer this by first asking "CONTRIBUTOR NO. 6937" a question. Suppose you were going to build a brick wall. Would it be better to have a workman sift the sand and mix the mortar, other workman to carry the mortar to the brick masons, others to carry brick to the masons, and leave the masons undisturbed to do nothing but lay brick, or would it be wiser to have each mason do the whole job: mix his own mortar and carry it up the scaffold to where he wanted it, get his own brick, and then go to work and lay them?"

My guess is that you will say the first or single-job method, which is the usual way, is the better. The latter is unthinkable. Likewise, specialization of labor or tasks in the hosiery mill is just as necessary to economical and efficient labor as it is in the building trade.

The operations in the finishing room, or any other department, that are the most efficient and bring about happier relations with the workers are those that run smoothly and require little mental effort on the part of the operator. The foreman and the "old man" in the private office are paid to do the brain work.

Some employees are more proficient at transferring, others will do better on the ticketing machine, while still others will get along best banding. The best policy would be to determine which operator is best on each job and then let her specialize on that task. And with constant repetition of an operation the worker becomes proficient and turns her part of the work off with clock-like precision. The equipment in the finishing room should be so arranged that the work will pass from one operative to another directly without any intermediate storing.

It is all right to rotate operatives from job to job at first to determine which job they are the most efficient at, or in the case of a spare hand which is being trained for a utility worker, but as a general thing it is better to keep her on the one job as long as she is satisfied. The productive effect of the single-job operator is all in the swing or habitual motions, and when changing from one job to another there is always a certain amount of inertia to overcome which means a lag in production until the worker becomes adjusted to the new work. So pronounced is this inertia in some operatives that changing them from one table or machine to another, even though the work and environment is apparently identical, they will find it awkward at first.

I can't agree with those who think that routine work involving only a few motion cycles is fatiguing. The muscles soon become accustomed to the work and adjust themselves accordingly; the work is performed somewhat mechanically. On the other hand, I have noticed that changing from one kind of work to another tires me more, and sometimes causes sore muscles.

As to rest periods, all employees should have time to rest after lunch; if possible, one hour to eat and relax. Any normal employee ought to be able to work four or five hours without a rest period. If it is necessary to stop and rest in the middle of the morn-

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The original question appeared on page 121 of the September 1939 issue

ing or afternoon it is an indication of one of several things: they are being worked beyond their physical capacity, they are not well, they are wayward, they are worried about something, or they are just plain lazy. Nothing is gained by rest periods every two or three hours—it is the steady pace that counts. Remember the fable of the tortoise and the hare.

As to the comparative efficiency of each method, it is difficult to say, because the single-job method has not been developed to the fullest extent in the hosiery mill as yet, but it is encouraging to note the increased efficiency of labor by specializing tasks in the weave room, in the automobile assembling plant, and in other industries.

For paying when using the two systems, the piece-rate method would likely be used in both cases. However, when changing to the single-job method the unit rate—in this case dozen pairs—must be reduced, but this does not mean that the earning power of each employee must be reduced. Indeed, it is quite possible that their earnings may be increased through the resultant efficiency of labor, without absorbing the reduced labor cost.

CONTRIBUTOR NO. 6946

Sizing Hose

EDITOR COTTON:

When quality goods are made it is essential that the hose be kept on size. The numbers could vary because of a slight variation in the yarn, weather conditions, or some machine defect.

At our plant we take sizings from each machine every day so that we can catch any change in size. One sock is taken from each machine, and using the perforating machine, we mark the size of the sock by sewing the perforated label on the heel.

This sock is then dyed, boarded, and sized.

This procedure may seem like a bit of trouble, but we have found it well worthwhile.

CONTRIBUTOR NO. 6968

Bad Selvages on Full-Fashioned Machines

EDITOR COTTON:

Bad selvages are one of the most common of all troubles in a full-fashioned hosiery mill, especially where older machines are in use; and these bad selvages are very stubborn to remove at times.

There are many causes for a bad selvage and when the fixer is starting out to remove it I suggest that he first study the condition of the silk, right up to the needle, as the silk has to be properly conditioned at the time that it is to be shaped into a stitch. A hard silk or one which has no "give" to it is more likely to throw a loop over the outside needle and make a bad selvage.

The snappers should be checked for correct tension, as should the tension rings and the felts.

When this has been done the fixer is ready to look into the machine. First check up on all worn parts throughout the coulier motion, look for worn cams and parts which will have an effect on the formation of the selvages. Take the proper gauge and see that the coulier cam and rollers are set correctly.

The Snapper Cam

Next the snapper cam should be checked on, as it is very necessary for this cam to be set exactly right to avoid bad selvages. The sinker and needle motion could also cause trouble. Carriers set too high or too low or too far away from the sinker head is a common fault in the making of bad selvages, but one which is easily overcome.

Frictions being under control will assist in preventing faulty selvages. They should be checked daily as a great deal of trouble arises from bad frictions.

If the press and rocker are examined it may prevent bad selvages on inside splicing loops. Split dividers should already be in the machine.

CONTRIBUTOR NO. 6974

Hush-A-Phone

Hush-A-Phone Corporation, 43 West 16th St., New York City, advises that a telephone silencer is the only means of safe-guarding the privacy of telephone conversation, and announces a new model for the hand-set telephone, which weighs only five ounces. It snaps on the mouthpiece of the phone.

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Nylon Plant Enlarges

According to E. I. DU PONT DE NEMOURS & Co., Inc., Wilmington, Del., the prospective demands for Nylon necessitate increasing the plant facilities at Seaford. The original plans for the first unit, now in the course of construction, called for 9 spinning machines. In keeping with a balancing out program recently adopted, the total will be increased to 12 machines at this plant. Also, the engineering department has been directed to proceed with designs for a second unit at Seaford.

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Constantine Heads Trade Association Executives

Earl Constantine, president of the National Association of Hosiery Manufacturers, was elected president of the American Trade Association Executives at the annual meeting of that body held September 20-23 at the Westchester Country Club, Rye, N. Y. This is a nation-wide organization, the membership of which is composed of the executives of the leading national, state, regional and local trade associations.

Knitting Machine for Bathing Suits, Sweaters, Etc.

Jacquard Knitting Machine Company, Inc., 270 W. 39th St., New York City, has made available a new machine for the knitted outerwear trade for the manufacture of bathing suits, sweaters, etc. This machine is the Model GW, a pattern wheel rib machine combining high production and quality. It has 24 feeds and 24 large pattern wheels. The bobbins stand still and the cylinder and dial revolve. Another feature is that the machine is absolutely dogless. Two cam races are in the dial so that twill or birdseye back can be made. It operates on individual motor drive.

A Mill Man Discusses the Seamless Situation

SEAMLESS hosiery mills just now are faced with a serious situation, unusual in that it does not result from ignorance, carelessness or poor management within the mill. There are three thorns in the flesh: *increased wages*—this thorn, though not sharp, has its effect; *increased prices*—yarns, belting, dyestuffs, paper boxes, everything the mill buys has gone up—this one really hurts; and, third, buyers flatly refuse to pay more for 1940 lines than for 1939 goods.

That, briefly, is what's hurting a great many seamless mills. As one well known southern manufacturer puts it, "In 25 years of seamless hosiery manufacturing, I have never been faced with as serious a situation as we have today." He is not guessing, he knows.

What can be done? Your guess is as good as mine, but this is precisely what happens in most mills: The management goes into a huddle and decides "We must step up production in all departments to absorb increased costs of labor and material." A rather simple solution, but an inevitable one.

Now, stepping up production in some departments is not an impossible task, if there is a reasonable amount of time in which to do it; but other departments may present some hard-to-meet problems. Let us assume a mill has been producing 2,500 dozen a day on 500 machines, and that the required additional production to meet increased costs is 500 dozen. All we have to do in the knitting department is to pick up one dozen per day on each machine. It usually can be done, especially when one dozen means keeping or losing a job for a number of people.

Now let's go to the looping department. It took 50 operators at 50 dozen per day each to keep up with the knitters, but now we must loop 500 dozen a day more. Can each operator loop 10 dozen per day more, or do six days' work in five days? Quite a different story, especially when you find that about three-fourths of every mill's loopers are good, fast hands, and the remaining fourth slow. If you want a real job, try to find ten 50-dozen per day loopers who are looking for work, or, still worse, hire 10 girls and try to make 50-dozen per day loopers out of them in a few weeks. Better hire 15 and hope to wind up with five aces in about six months.

So the simple and inevitable plan of stepping up production is in the rough on the second hole. What good in production in the grey if it cannot be looped and sent to the

grey stock department? In highly industrialized parts of the country, where plenty of experienced help can be found, it is not difficult to step up production in all departments at once, but try it in a mill which gets its help from rural sections or small towns.

Many mills began to clean house immediately by discharging inefficient operators when wage-hour legislation was merely political talk, and these mills are in better shape than those who hoped it would not materialize. Wage-hour legislation is not entirely to blame for the present seamless situation. It has, however, directly and indirectly contributed toward it. Nor do we contend that even the present minimum rates are too high—our one complaint is that it came too *fast* to give many mills in the South a *reasonable* chance to meet it.

The whole situation is very much one-sided. Why should the cost of every item of material needed to turn out finished hosiery go up and yet the mill be expected to ask no increase in price? Why should the mill be expected to sell a number to the retailer at 60 cents per dozen which cost the mill 50 cents or better to produce, and for which the retailer gets a neat little $1.20 per dozen. The yarn salesmen, the coal salesmen, the supply and box salesmen, all come to the mill and tell us, "Our prices have gone up". They do not haggle or coax us to pay the increases. Why should our genial selling agent in New York call, write or wire asking, "Why are you demanding an increased price for 1940 goods; other mills are selling better merchandise than yours for less." We wonder, "Is he crazy, are the other mills crazy, or does he think we are crazy?"

The president of a well known hosiery selling agency in New York City said the main reason most mills are being forced to accept such low prices is they lack the guts to hold out for a fair price. He may be right—he *should* know.

ALBERT T. RUSSELL

Piedmont Division of AATCC Meets at Charlotte

The Piedmont Division of the American Association of Textile Chemists and Colorists held a meeting at the Hotel Charlotte, Charlotte, N. C., Saturday, October 7. About 275 were present.

Henry Gaede of Laurel Soap Manufacturing Co., Inc., chairman of the division, presided.

A golf tournament was held Saturday morning with Pete Gilchrist of Charlotte (N. C.) Chemical Laboratories and John Neely taking the prizes.

Dr. W. F. Van Riper of E. I. DU PONT DE NEMOURS & Co., Inc., delivered an address comparing the status of the dyestuff industry in 1914 with that of today. The speaker pointed out that this industry, as well as allied chemical industries, is in a position to supply America with her dyes, and there is little need for concern of industry that her supply of dyestuffs will be cut off because of foreign conditions, as it was in 1914.

A brief business session was held with the following officers being elected:

Chairman, H. E. Kiefer, Ware Shoals (S. C.) Mfg. Co.; vice-chairman, L. M. Boyd, Scholler Bros.; secretary, Robert Sloan, Du Pont; treasurer, Robert Howerton, Calco Chemical Co.; councilors, R. E. Rupp, Pacific Mills, and Henry Gaede, Laurel Soap Mfg. Co.; sectional committee, T. W. Church, H. Puckett, M. R. Pickler, and H. E. Dixon.

TRENDS and HIGHLIGHTS of the KNIT GOODS MARKETS

After Excited Buying of Goods During September Deliveries Now the Important Problem—Manufacturers Place Goods on New and Higher Replacement Basis Following Drastic September Price Upturn—Retail Volume Picking Up But Higher Prices Resisted

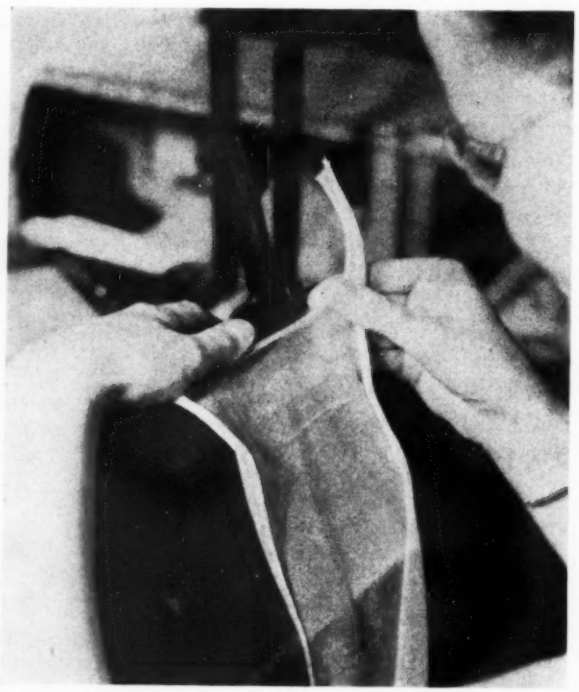
Philadelphia, October 16, 1939

FOLLOWING THE PLACING of a large volume of business, in some cases an almost record-breaking volume in so short a time in knit goods, during September, the situation has been less excited in October so far as new orders are concerned. This is natural because commodities such as silk, wool and rayon have advanced in price and cotton yarns have shot up even though raw cotton has not, making a strong price situation in goods. The industry is now busy and giving its attention to getting out the large volume of business but it should be recalled that most of this business was at the lower prices and not the current higher lists. Retailers are saying that many of their customers want to continue paying the same price for knit goods even though this later may mean they will have to have a cheaper constructed garment or article. Higher primary prices will not be fully felt at retail until 1940, assuming that there is no major change downward in the meantime.

Full-Fashioned

Late last month leading makers of branded full-fashioned women's hosiery advanced prices. The advance was uneven in that one maker, Julius Kayser & Co., made the most drastic and the Gotham and some others made less sharp increases. The situation is unique because in most price changes the various branded firms soon quoted about the same. This time Kayser advanced the base number from $6.35 a dozen up to $7.00, making the retail price tag suggested jump from 85 cents a pair up to $1.00. The new prices went into effect October 2 at wholesale, and October 16 at retail. Gotham Silk Hosiery and Van Raalte, two other leading branded firms kept certain numbers at $6.25 a dozen so that they will have at least one number that will continue to sell at retail at 85 cents. The retail tags on branded therefore will be 85 cents, 89 cents and $1.00 on the volume sellers. The uneven situation will work itself out in the near future; if silk goes higher the lower ones will come up and if silk goes down, then the Kayser firm may make some readjustments. Manufacturers of full-fashioned goods are working at full time rates having booked a large volume of business but they report that buying has not been very far ahead when the full new and higher prices were involved.

There has been heavy volume in the men's half-hose field and manufacturers now have business in hand to keep them actively engaged for several months ahead. The situation in wool half-hose has been unusually strong because of the war which made the raw material much higher and worsted and woolen yarn spinners have become so busy that they were unable to supply knitters with quick delivery yarns for making late duplicates. In addition there is the problem to meet export demands for wool half-hose. English mills knitting these lines are busy supplying the home trade and therefore countries such as Norway, Sweden and Argentina have been inquiring for American half-hose. Prices of these lines are very much higher and in recent weeks it has been difficult to get quotations on large amounts. All types of half-hose have been advanced to cover the new raw material level and the higher labor costs that went into effect for the hosiery industry. Numerous mills say they are sold well into next year but much is from large chains and others that got their orders down early and much lower than replacement costs now are. Knitters have even been receiving export orders in wool half-hose from English buyers.



The topping operation—Holeproof

The war buying in all markets during recent weeks and on top of that the advance in manufacturing costs through new 32½-cent wage minimum going into effect has created much excited buying and, advancement of prices of all kinds of seamless goods. This included anklets and children's lines as well as women's seamless. In fact the new wage minima under the Fair Labor Standards Act have been more effective in prices of seamless than full-fashioned because most full-fashioned were near the new limit or up there already while numerous seamless mills have had to make important changes increasing their costs materially. The advance in prices of such lines as women's silk seamless has been drastic. This has been made more drastic than it would even in September by the higher silk market. Such lines as women's 320-needle

have gone up more than 40 cents per dozen and buyers even then find knitters unwilling to take orders too far ahead.

In anklets and children's where business in recent months had been outstandingly large, the last few weeks have made the situation even more active as prices advanced on higher raw costs, higher labor costs and the added push of forward contracting after the war broke out abroad. Large orders for far ahead have been placed by chains, mail order firms and retailers in general so that this branch of the industry is well fixed for months.

Underwear

Underwear manufacturers are very busy and have orders well into next year. Prices have advanced in all lines due to the higher textile wage minimum and also because of advances in cotton yarns and the most active demand for goods in a long time, giving knitters the opportunity of putting prices on a more profitable basis than they had been for such a long time. Most manufacturers have raised prices to a new basis of $5.37½ per dozen for the 12-pound men's suits in the lower bracket. Advances in underwear having a percentage of wool have been very sharp because of the drastic upturn in wool and wool yarns. New and higher prices for fall underwear will set the pace for prices another season, assuming no great change occurs in cotton and yarns in the interval, and the market generally expects further advances in heavy cotton ribs before the end of the year, especially if the underwear industry gets a higher wage minimum by that time.

Branded Full-Fashioned Prices Reflect Higher Silk

Full-fashioned hosiery manufacturers have placed new price brackets into effect but the situation is unusual in that the leading branded concerns are naming three different price brackets following the action taken September 21 by Julius Kayser & Co. in setting $7.00 as its minimum wholesale price and $1.00 as its suggested retail figure. Shortly thereafter Gotham Silk Hosiery Co. issued a new list retaining $6.25 as the wholesale price and 85 cents as the retail price for its volume four threads and seven threads. Phoenix Hosiery Co. as well as some others advanced their base construction to $6.50-$6.60. In the case of Julius Kayser the price jump which became effective October 16 at retail and placed their base line at $1.00, this being the first time in the last five years. This firm will have nothing for resale below a dollar.

Retailers were given the opportunity to buy at the old prices up to September 30 for delivery not later than October 14. September 26 Gotham Silk Hosiery Co. and Van Raalte, two other leading manufacturers of branded, announced new prices but both offered numbers that permitted retailing below the $1.00 a pair level. The new Gotham list keeps two former numbers, a four-thread and seven-thread unchanged at $6.25 a dozen, assuring a continuance of the present retail price of 85 cents. Van Raalte advanced its "Philmy" line from $6.25 to $6.50 a dozen, making the new retail price 89 cents a pair, the present price being 85 cents. Both Gotham and Van Raalte in statements expressed their desire to keep prices as low as possible without disturbing the popular price lines of retailers but pointed out they were now forced to do so. The statement said in part: "The Gotham Silk Hosiery Co. has always realized the importance to the retailer of maintaining his popular priced lines. We need not point out to you, as you are fully aware of the fact, that the price of silk has increased to a point where silk alone would increase the cost of construction in every style in our line in excess of $1.00 per dozen. In spite of these increasing costs we are going to continue our present price brackets from 85 cents to $1.35."

The price situation in the branded full-fashioned market through these steps took on an uneven appearance, the retail price minima on branded merchandise being at present 85 cents, 89 cents, and $1.00 a pair. Minimum branded mill quotations range from $6.25 to $7.00 a dozen. This disparity will probably not be maintained over a long period. If silk holds firm at present levels or advances moderately it is only a question of time before all branded full-fashioned hosiery will be at a minimum price of $7.00 a dozen. If on the other hand substantial weakening should occur in the silk market it is probable the firms quoting the higher prices would find it advisable to meet the present competition. Unbranded hosiery manufacturers have raised their prices but most of them have brought them in the line with the lower full-fashioned level rather than the higher one. These knitters have averaged their silk costs in other instances at arriving at a new price list, many of them having about half their silk bought at low figures and the other half at approximately current prices.

FORECAST

(Opinion submitted by COTTON'S market correspondent)

Philadelphia, October 16, 1939

There is no denying that considerable speculative activity in textiles was brought about by the war abroad; neither is there doubt but that business in the United States had started to pick up before this occurred. Both coming at the same time have brought business activity in this country somewhat higher than any time in 1937 and if the trend keeps up for another month it is probable that the level of business in 1929 will be reached.

Yet it is possible irrespective of developments abroad that buying ahead has been done a little too extensively and we are likely to have a waiting period or a setback of small proportions early in 1940 for a short time. If peace comes before the end of this year we can look for this setback in the United States economic picture to be more severe.

Prices of many textiles have been run up too fast but then there are sound offsetting factors to be remembered. The first is that manufcaturers' costs have been upped substantially in the year. There have been drastic increases in raw materials and in labor, the new textile minimum wage levels being a factor. In addition the pickup beginning early in September has given textile manufacturers their first chance since early 1937 to sell goods on a profitable basis and where buyers had things their own way for so long it should not be held against textile manufacturers that they are trying to make a profit now.

Raising prices too high or too fast has its penalties; marginal mills come into the picture and plague the other manufacturers and spinners and this is being done now in cotton.

Looking ahead in the various textile fibers: Cotton goods prices have probably reached a point at which a leveling off in activity will be seen with prices easing some but not much. In silk, prices will remain firm and if any change comes it will be higher but manufacturers are advised to continue buying this commodity only a short time ahead, a month or two at the most; in wool and its manufacturers, prices are dependent to a great degree on continuation of the war; the end would bring liquidation but not so much as many think; in rayon prices are going higher than the advances put into effect by American Viscose in September when they were raised 2 to 3 cents.

Textile manufacturers, and knitters especially, have orders to assure good business for the balance of the year no matter what happens abroad but there is no question but that peace would ease the pressure noticeably in all markets that have spurted on the war.

NLRB Holds Hearing on Rosedale Charge

Charges that the Rosedale Knitting Co., Reading, Pa., was guilty of unfair labor practices and had discriminated against members of the Rosedale Employes Association in favor of the American Federation of Hosiery Workers, were heard in Reading by the National Labor Relations Board. Counsel for the company admitted discriminating against non-union workers in fulfilling terms of its contract with the Federation but denied it was guilty of unfair labor practices in living up to the terms of this contract. The charges were brought by the Rosedale Employes Association which claimed that the Federation did not represent a majority of the mill's workers on August 26, 1938, when its contract with the Federation was negotiated. Labor Board attorneys maintained in this case that the Federation did not have a majority of workers and that the contract therefore was void.

Card index records of the union showed a total of 1,573 memberships from the Rosedale workers from 1933 to the date of the contract with no resignations or expulsions. A statement submitted by an attorney for the Labor Board showed the average number on the mill's pay roll in 1939 as 2,800 of whom 2,514 were production workers. The 1938 payroll for production workers was given as $2,173,297. The statement listed the Rosedale production in 1938 at 899,695 dozen pairs with gross sales of $4,491,423. Ray F. Borda, vice-president and general manager of the plant testified that Charles Chipman is president of the company and William C. Bitting, former president, is now chairman of the board and is not active in the operation of the plant.

The hosiery union took the position that no other agency can claim to be the agent of Rosedale employes and that the Rosedale Employes Association is not a labor organization and does not perform any of the functions of a bonafide labor organization. The Rosedale-union pact provided that the union was the sole collective bargaining agency for its members; Rosedale agreed to prefer union members in hiring new help for the departments mentioned; the check-off; hours were given as not more than forty per week nor more than five days of eight hours each except with respect to double shift, footing operations not to exceed 37½ hours, five days of 7½ hours each; all knitting machines shall be operated as single jobs and Dr. George W. Taylor was named impartial chairman with the agreement in force for three years up to and including August 31, 1941.

Outerwear and Underwear Wage Committees Named

Appointment of industry committees authorized to recommend minimum wage rates under the Fair Labor Standards Act for the knitted outerwear industry and the knitted underwear and commercial knitting industry was announced September 21 by Administrator Elmer F. Andrews, of the Wage and Hour Division, United States Department of Labor, Washington, D. C. These two divisions of the textile and apparel industries employing nearly 100,000 workers, more than 60,000 being employed in the knitted underwear and commercial knitting industry and more than 30,000 in the knitted outerwear industry. With the appointment of these two committees the last major textile and apparel operations have been included in the jurisdiction of industry committees. The total number of workers in textiles and apparel for whom machinery of minimum wage designations on an industry basis have been set in motion, comes to about 2,000,000.

The membership of the outerwear committee is as follows:

FOR THE PUBLIC:

Chairman, Charles Ray, former chairman of the Connecticut Minimum Wage Board for the Laundry Industry, Goodyear, Conn.; Paul F. Brissenden, professor of economics, Columbia University, New York; Jonathan W. Daniels, editor, The Raleigh News and Observer, Raleigh, N. C.; Harrold English, chairman of the California State Planning Board, Los Angeles; Fred Lazarus, Jr., vice-president and treasurer, F. & R. Lazarus Co., department store, Columbus, O.; William N. Loucks, associate professor of economics, University of Pennsylvania, Philadelphia.

FOR THE EMPLOYES:

David Dubinsky, president, International Ladies' Garment Workers' Union, New York; Jacob Halpern, ILGWU, Boston; Abraham Katovsky, ILGWU, Cleveland; Jannie Matyas, ILGWU, San Francisco; Louis Nelson, ILGWU, Local 155, Brooklyn; Samuel Otto, ILGWU, Philadelphia.

FOR THE EMPLOYERS:

Ingram Bergman, president, Bergman Knitting Mills, Philadelphia; I. B. Davies, secretary and treasurer, Bradley Knitting Co., Delavan, Wis.; John Springthorpe, Pine State Knitwear Mills, Mount Airy, N. C.; Louis Sternberg, president, Sternberg Knitting Co., New York; E. W. Stewart, president, Pacific Knitting Mills, Los Angeles; Roger W. Whitman, president, American Hosiery Co., New Britain, Conn.

The committee for the underwear industry is as follows:

FOR THE PUBLIC:

Chairman, John P. Devaney, former chief justice of the Supreme Court of Minnesota; Mr. Daniels; Miss Marion Dickerman, principal, Todhunter School, New York; John C. Evans, professor of economics, Albright College, Reading, Pa.; Mr. Lazarus, Jr.; George Fort Milton, publisher, Chattanooga News, Chattanooga, Tenn.; Arthur J. Patton, former buyer for the J. C. Penney chain, New York; Philip Taft, assistant professor of economics, Brown University, Providence, Rhode Island.

FOR THE EMPLOYES:

Mr. Dubinsky; Charles M. Fox, president, United Textile Workers of America (AFL), Savannah, Ga.; John S. Martin, ILGWU, Atlanta, Ga.; Ray Reidenbach, Textile Workers' Union of America (CIO), Kenosha, Wis.; Emil Rieve, general president, TWU; Samuel Shore, ILGWU; Harry Wander, ILGWU, Newark, N. J.; Joseph P. White, TWU, Cohoes, N. Y.

FOR THE EMPLOYERS:

L. B. Boynton, general manager, Earnshaw Knitting Co., Newton Mass.; Ralph M. Jones, vice-president, Utica Knitting Co.; Utica, N. Y.; E. J. McMillan, president, Standard Knitting Mills, Inc., Knoxville, Tenn.; T. O. Moore, assistant secretary, P. H. Haines Knitting Co., Winston-Salem, N. C.; T. H. Mueller, vice-president, Julius Kayser & Co., New York; William Ravner, president, Warburn Knitwear Co., Inc., New York; Mitchel Schneider, Mitchel Schneider Corp., New York; H. E. Sims, secretary and treasurer, Atlas Underwear Co., Piqua, O.

Notification was received that the first hearing on the establishment of minimum wages and maximum hours would be held in Washington, October 26 before the above named knitted outerwear committee.

Hosiery Federation Holds Convention

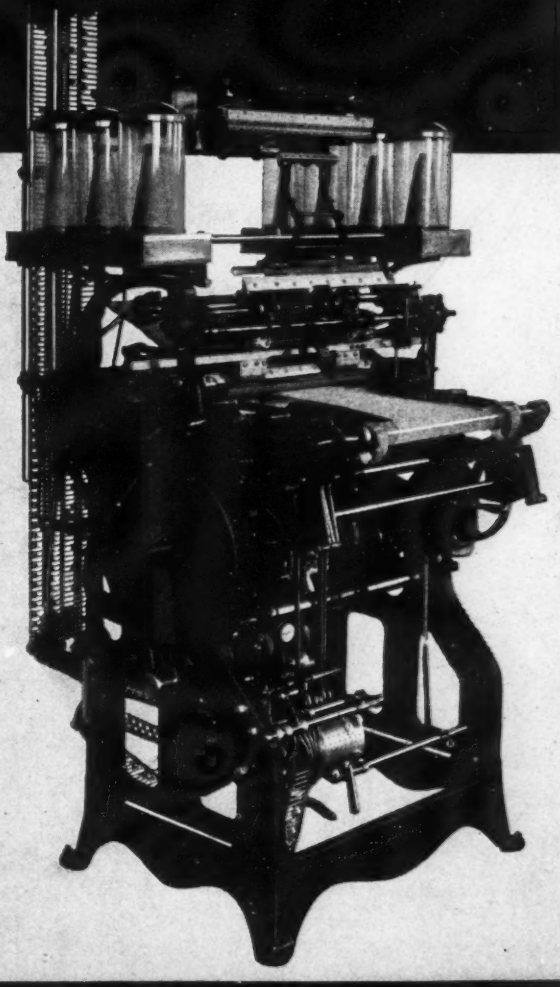
Alexander McKeown, first vice-president of the American Federation of Hosiery Workers, was elected president at the annual convention of this organization in New York. He succeeds Emil Rieve who retired after ten years in that office to devote himself to his duties as president of the Textile Workers' Union of America. During the last week Mr. Rieve was honored further when he was named vice-president of the CIO. Included in the speakers that addressed the convention was Sidney Hillman, chairman of the Textiles Workers Union and a vice-president of the CIO. Mr. Hillman told the delegates that American labor must demand and receive wage increases in keeping with price rises and growing profits of industry. Mr. Rieve discussing overproduction in his annual report said there is no room on the basis of present consumption for the 16,110 knitting machines in the full-fashioned hosiery industry.

The retiring union president characterized the organization's three-year agreement with manufacturers as "one of the most progressive steps we ever took". Wage reductions included in supplementary agreements have been slightly overcome by an increase in productivity he said. In his report Mr. McKeown stressed the value of manufacturers having their own brands. Dr. George W. Taylor, impartial arbitrator, under agreements between the union and a number of mills praised the stabilizing effect of the hosiery minimum wages which became effective September 18. Dr. John C. Evans, impartial arbitrator, between manufacturers and the union in the Reading district said "The way the agreement has worked out has instilled in the employers the validity of collective bargaining." Dr Evans said that collective agreement had at first been viewed with doubt by manufacturers in Burks County and that the employes in the more rural sections had not lent themselves readily to organization but that "on the whole a good job has been done".

LEGS and FEET

LEGS and FEET

. . and never a mark where they meet!



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Cheney Advises Trade on Wage and Hour Act

President Roy A. Cheney in a communication to members of the Underwear Institute, endeavored to clear up doubts in the minds of manufacturers regarding the operation of the Wage and Hour Act. Commenting on the hours, he pointed out that under the law hours go to 42 per week on October 24. Any mill can work over 42 hours per week but must pay at the rate of time and one half time worked over 42 hours. In respect to wages on October 24, the making of underwear garments go on a 30 cent per hour minimum wage basis. He pointed out in the men's and boys' woven underwear which is under the jurisdiction of the Apparel Industry Committee is faced with a recommended 32½-cent per hour minimum wage but this will not go into effect until the Administrator has held a public hearing. Mr. Cheney said the knit fabric glove trade, under the jurisdiction of the Apparel Industry Committee also is faced with a recommended 35 cents per hour minimum wage which also will not go into effect until the Administrator has held a public hearing.

The spinning departments, under the jurisdiction of the Textile Industry Committee will pay a 32½-cent per hour minimum wage for the spinning or processing of yarns, cotton, rayon or silk, spun on systems other than the wool system and containing not more than 45 per cent wool by weight. Spinning of yarns on the woolen system, and even those spun on systems other than the woolen system containing more than 45 per cent wool are subject to the Wool Industry Committee which has voted to recommend a 36 cent per hour minimum wage but no hearings have been held by this committee as yet. In view of the fact the Underwear Committee has not yet come to a conclusion the underwear industry minimum wage will go to 30 cents per hour October 24.

Second Nylon Unit Planned by Du Pont

The interest displayed in Nylon and the prospective demand for this new yarn which is expected to revolutionize the manufacture of full-fashioned hosiery have caused the DU Pont company to announce that the new plant now under course of construction at Seaford, Delaware, will be considerably enlarged over the original plans. The original plans called for the first unit, which is understood to be scheduled for full operation early next year, with nine spinning machines but this, according to the new announcement, will be increased to twelve. The new yarn, which the trade has now seen in many instances, together with full-fashioned hosiery named therefrom has aroused more interest than any recent development in the industry and while this will probably not follow in the next year because of the relatively limited quantities that will be available its effect in the hosiery field is expected to be a major one.

Hosiery Finishing Costs Advance

The charge for finishing hosiery in the Philadelphia area will increase about 7 cents per dozen on or about October 23, according to dyeing and finishing concerns in that district. This has been brought about by drastic increases in the prices of all types of materials used in the finishing of hosiery and in the labor cost through the setting of new minima under the Federal Wage and Hour Act. One of the leading hosiery finishers said that the increase in one item alone, that of paper boxes, has been sufficient to cause an advance of several cents in finishing costs per dozen and in addition to this they have been confronted with sharp advances in chemicals and dyestuffs. Several reported that their sources of chemicals have withdrawn prices and are limiting deliveries while sources of dye-stuffs are practically allotting current deliveries so that finishers are in many instances unable to obtain all they want.

Increased Call for Mercerized Yarn Expected

Yarn mercerizers anticipate a considerable increase in demand not only from hosiery and underwear manufacturers here but also from South and Central America, according to Dean Hill, president of the Mercerizers Association of America. During recent weeks, according to Mr. Hill, they have seen a considerable expansion in demand for mercerized cotton yarn from South and Central American countries and especially from Argentine. For a number of years American mercerizers have been completely cut off from the Argentine market on account of favorable English exchange rates. Shipments of mercerized yarn to the Argentine during 1938, according to Department of Commerce figures, equaled only 5 per cent of the total United States export shipments of mercerized cotton yarn. With the declaration of war many inquiries came from Argentine, resulting in the sale of substantial quantities.

Indications are that Argentine and other South American countries wish, for the present at least, not to rely on England for their future supplies of mercerized yarn. It is also felt the shortage of rayon in South America will affect shipments of mercerized cotton yarn to those countries. Stories of inability to secure rayon from European countries thereby causing a switch to mercerized cotton yarn in men's hosiery have been received. South America has been a large user of European rayons and now with their source of supply cut off and their inability to secure rayon they are left largely dependent on mercerized cotton yarn according to Mr. Hill. Individual mercerizing concerns have reported in recent weeks that they have been receiving numerous export inquiries but in a number of instances they were unable to quote on these due to the exceptionally active demand for mercerized yarns from American knitters, leaving them no excess for export markets.

Chinese Cotton Hose Imports Show Gain

The growth in imports of cotton hosiery from China was a feature of foreign trade during the first eight months of this year. Total hosiery imports during this period were 748,619 dozen pairs valued at $681,586, according to the National Association of Hosiery Manufacturers. Last year during the first eight months imports were only 543,378 dozen pairs valued at $586,212. The increase this year is attributed to the general rise in international trade. So far as China is concerned it was stated that it is not the present total of shipments that bears watching but rather the extrent of the rise over last year. For example, during the first eight months of last year only 5,550 dozen pairs of cotton hosiery were brought in from China whereas during the same months this year the total was 92,304 dozen pairs. Japan retained its lead in this field with total cotton hosiery exports of 478,222 dozen pairs to the United States during the eight month period or slightly more than during the same period in 1938. Imports of wool hosiery mainly from Great Britain were considerably larger this year.

Favorable Tax Assessments Urged

A special meeting of a hosiery advisory committee of the State Department of Commerce was held in Philadelphia, September 27, and the suggestion was made that Pennsylvania plants get more favorable consideration from cities and towns in tax assessments in view of southern competition.

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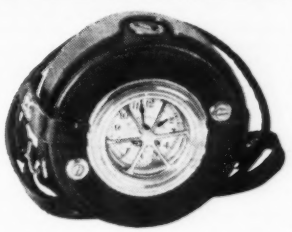

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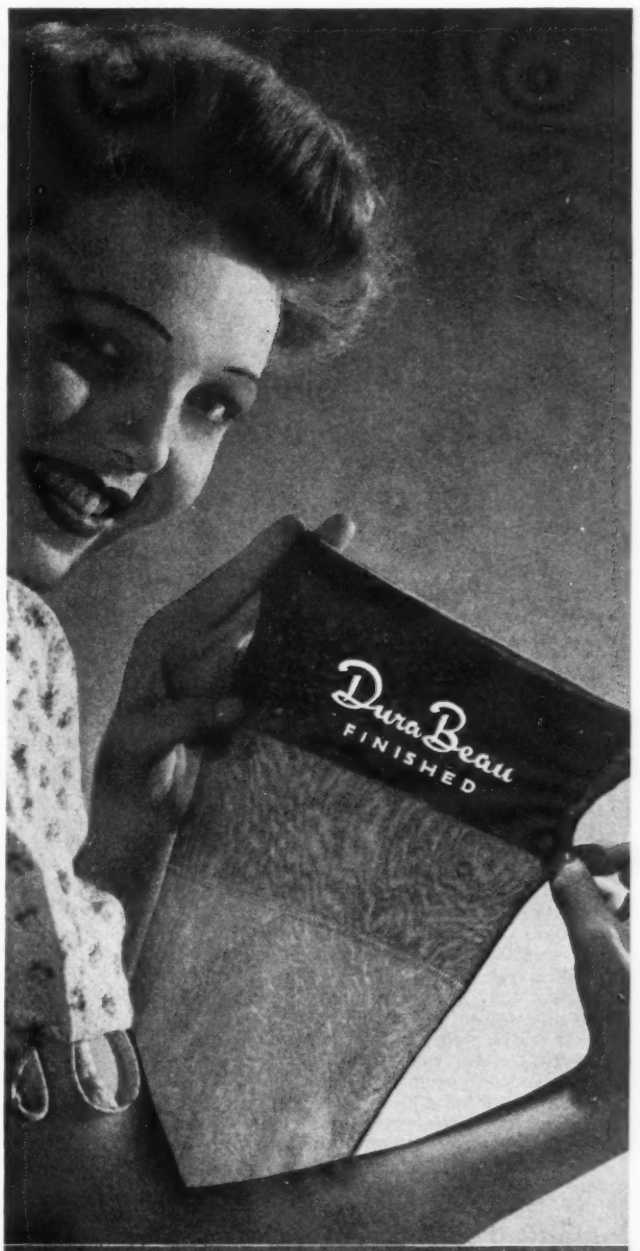

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TRENDS—THE YARN MARKETS

Higher Prices for All Types of Yarns But by Mid-October Widespread Resistance Came from Buyers—Talk of Peace Brings Reaction from Peak Wool Levels—Higher Prices for Rayon Yarns and Mercerizers Place New List in Effect

Philadelphia, October 16, 1939

AFTER A WILD PERIOD of activity and constantly advancing prices the yarn markets are showing signs of stability and in one or two instances prices have actually softened from the peaks. Manufacturers feel that the rises have been so drastic that even if the war abroad lasts or does not that these would not be maintained as soon as the urge to sell new quantities makes its usual appearance. In cotton yarns and wool there have been reports in the last few days that some sellers were quoting lower prices to stimulate new orders but most agree that the future course of prices depends on what happens abroad in the weeks to come. There is little doubt but that part of the base of the price structure at least rests upon the premise that the war abroad will continue for a time; if it does not most look for some easing in prices but not enough to cause any widespread effect because little has been sold at peak levels.

Cotton Yarns

Although not as active as during the first two weeks new business in cotton yarns continued good during the latter part of September but diminished materially during the first two weeks of October. At the present time new business is quiet and considerable resistance is being shown to the higher prices quoted by spinners. In addition to this for the first time since the excited trading began there are reports in the market that a few spinners have been quoting lower prices which is in contrast to the steady upward trend of the previous five weeks or more. New business has been quiet not only because prices have reached a level above that which manufacturers feel able to pay but because both spinners and manufacturers are now well covered ahead and they see no reason for hurrying into new commitments immediately. Weavers are covered in many instances to the end of the year while knitters are covered further ahead, many up to next May.

In the last month prices have been strong and although no changes have been made in the last ten days of importance the asking level is from one to ten cents higher than it was a month ago. Carded cones are approximately one cent higher, being quoted now on the basis of 24 cents for 10s; 2-ply carded weaving has advanced from 2 to 3 cents in the month while even greater advances have been registered in combed qualities where the finer counts such as 80s have jumped as much as 10 cents a pound based on sales a month ago and asking prices at the present time. Last month 80s two-ply were quoted at 70 cents but at the present time the same yarn is quoted at 80 cents. On September 15 mercerizers advanced their quotations two to three cents per pound and this was followed on October 4 with another advance, bringing 60s two-ply ungassed to 67 cents compared with 65 cents in the previous list and with 62 cents in effect prior to September 15.

The present boom in cotton yarn sales places spinners in the most comfortable position they have enjoyed for many years, several large commission houses here reporting that in September they did the largest volume of business of any month in their history while during the present month they expect to ship out a larger poundage than any time in the last few years. Larger production of combed yarn could be attained if these producers went on three shifts instead of two but this is not being done and practically all of the industry is continuing on two shifts or approximately 80 hours per week. There are reports a few carded yarn mills are going on to three shifts to take advantage of the current shortage of all types of cotton yarns for immediate delivery but the concensus of the industry is that spinners will make a serious mistake by doing this. It is possible it will endanger the profitable basis on which yarns are now selling.

Silk

Although silk has fluctuated narrowly over the month its price at present is little different from that of a month ago. It is displaying a very steady tone with it being easier for prices to go up than down notwithstanding the talk of peace. Full-fashioned hosiery mills are now operating at an active rate, being busy seasonally even though new business is not being placed at the higher prices very far head. Knitters that do not have a large quantity of cheap silk coming in are following a similar policy in their raw material purchases, buying this commodity only to cover goods orders as the latter develop. Raw silk consumption in the United States reached a total of 36,869 bales during the month of September which is about 5,000 bales larger than the trade generally had anticipated. The average trade guess was in the neighborhood of only 31,650 bales. During August mill takings in this country amounted to 33,095 bales and in September a year ago they were 38,844 bales. In August raw silk consumption by the hosiery industry in the United States was 82 per cent of total deliveries to American mills. Women's full-fashioned took the great bulk of the silk with women's seamless silk taking the next largest portion. While there is little speculation in silk at the present time by knitters most manufacturers are now convinced that based on the amount of silk that will come into the market over the next few months and the large amount that will be needed, that the present level around $3.00 is not too high and that a somewhat higher price is not impossible.

Rayon

There has been a good demand for rayon yarns over the month and larger producers are well sold ahead over the period through which they will take business. Indications are rayon consumption will reach a new peak for this year, this being suggested by the large consumption during the first nine months. Manufacturers believe that filament rayon yarn has benefited from the high price of raw silk while demand for staple fiber has expanded because of the development of new uses such as in the men's wear field. It is also felt that staple rayon will be aided materially during the last quarter of this year by the higher wool prices and the control imposed upon the Irish linen industry by the British Government. It is predicted that the total United States consumption of rayon yarn and staple fiber in 1939 will reach 445,000,000 pounds, a record high. Of this it is estimated 345,000,000 pounds will be filament yarn and 100,000,000 pounds will be staple fiber.

Fourth quarter consumption, however, is not expected to equal the high third quarter figure. It is estimated at 117,000,000 pounds of which 85,000,000 is expected to be filament yarn and 32,000,000 staple fiber. There has been no price change since September 20 when the American Viscose Corp. raised its prices two to three cents a pound.

Worsted Yarns

Worsted knitting yarn prices have advanced rapidly since the middle of last month. This has been sharper in some counts than in others. For example 2-20s, 50s, then quoted at $1.30 is now held at $1.40 to $1.45; 1-18s, 50s dyed was quoted at $1.45 a month ago compared with $1.55 at present but 1.18s, 64s dyed has jumped even further because of the exceptional strength in fine grades of wool. This yarn is quoted about 25 cents a pound higher than a month ago. Knitters are generally covered ahead till the end of the year and at much lower prices than current and the same situation exists in the goods end where knitters are busy but almost exclusively on lower priced orders. This means that the new and higher price level will not receive a thorough test until early next year although duplicate orders already reflect the higher level in the yarn end but most knitters report that duplicates have been conspicuous by their absence.

FIG. 20.

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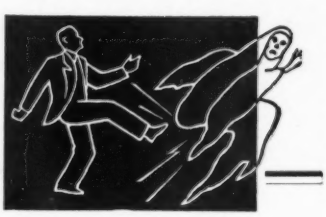

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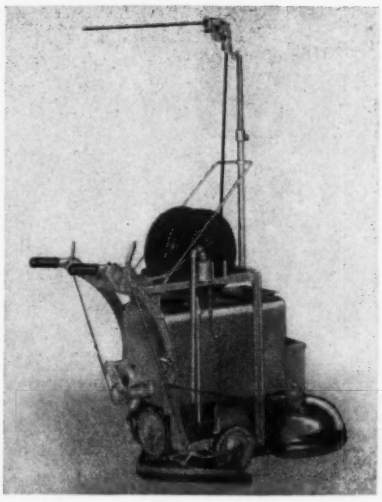

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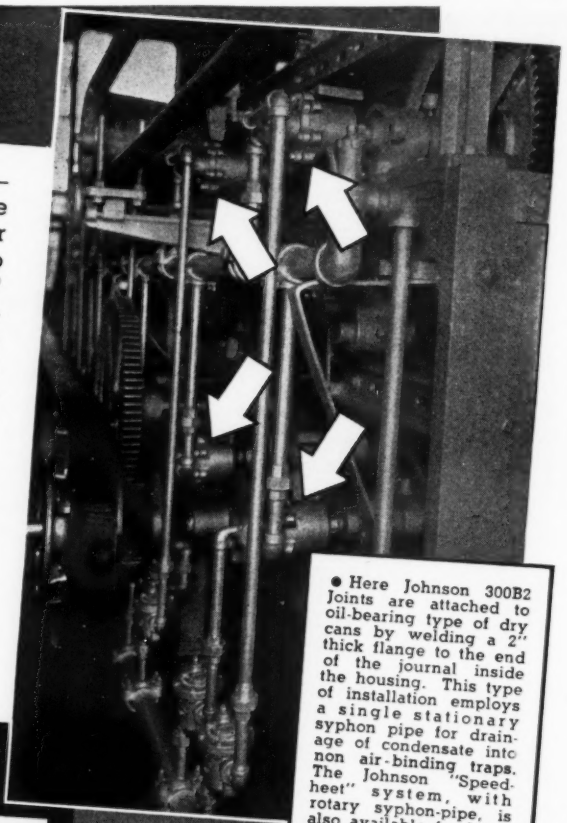

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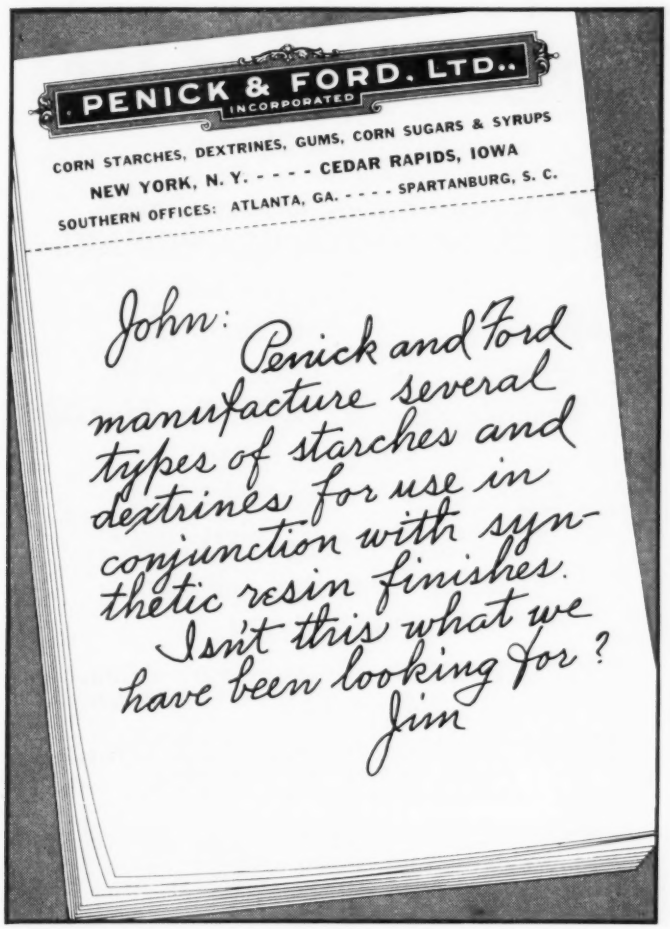
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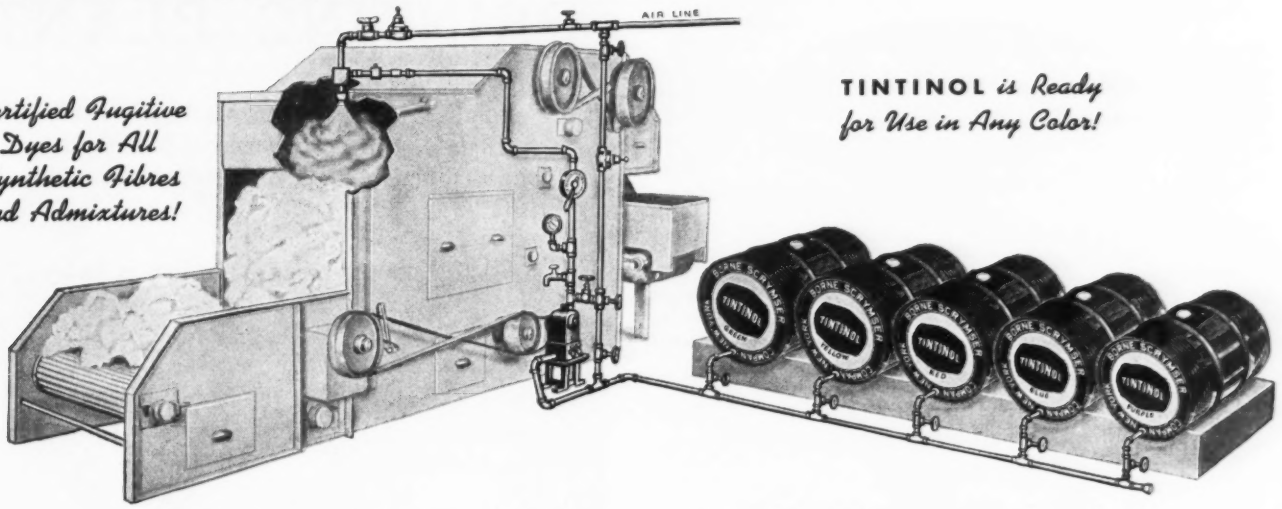

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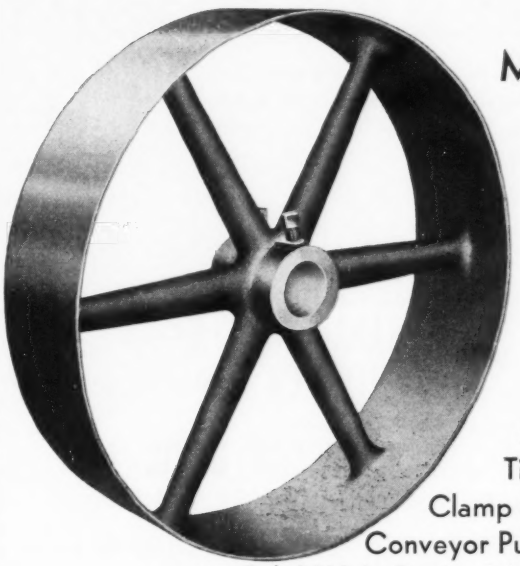

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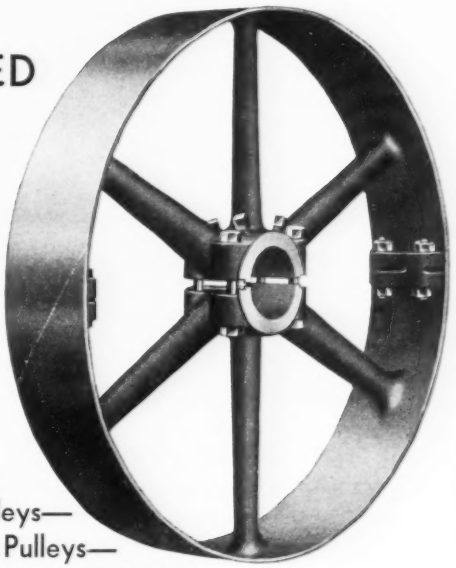

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"We have furnished more Complete and Partial Pulley and Shafting Equipment to Cotton Mills than any other manufacturer in the United States"

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OPERATING 3000 ROOMS IN SOUTHERN HOTELS

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Former Member Examining Corps
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POSITION WANTED

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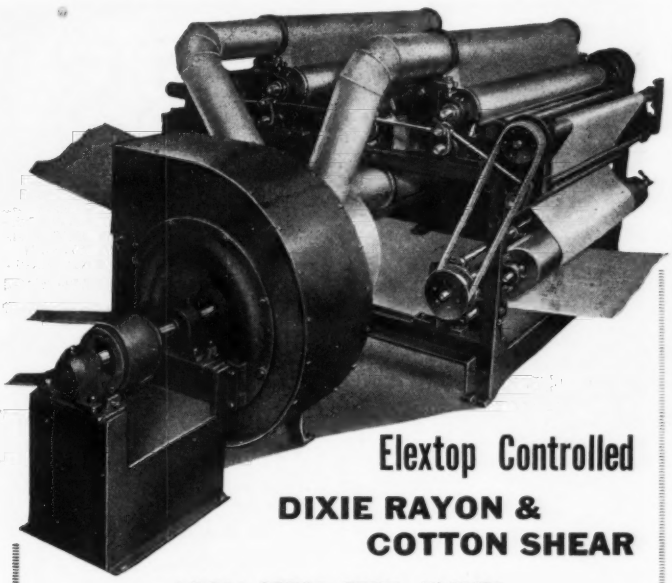
POSITION WANTED

Experienced industrial accountant, employed at present, wants position with textile firm. Young, single, college graduate, good references. Will go anywhere. Address R. P. S., c/o COTTON, Grant Building, Atlanta, Ga.



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DIXIE RAYON & COTTON SHEAR

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PERFECTED CLOTH CONTROL
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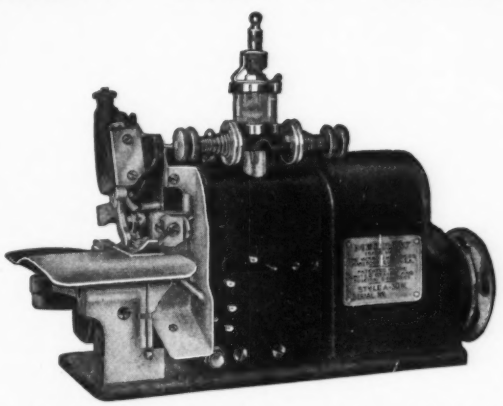

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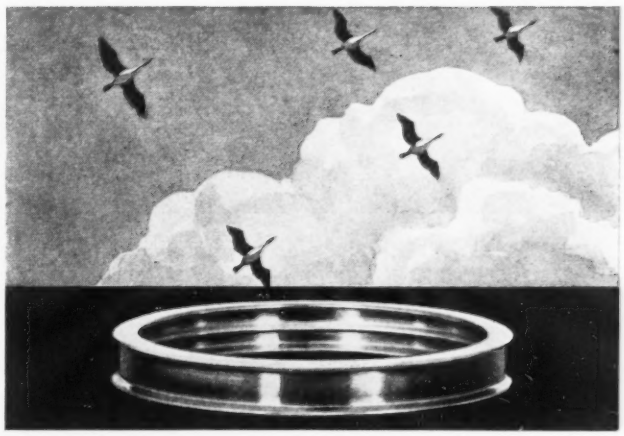

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"and it's helped improve the efficiency and health of our employees."

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49C IND.

POWERS TEMPERATURE AND HUMIDITY CONTROL

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MORSE Roller CHAIN

INTERCHANGEABLE

The Morse 3700 Series Roller Chain is interchangeable with every other standard round pin roller chain. A new and effective design makes possible complete interchangeability without sacrificing the lubricating features which make Morse Roller Chains so outstanding in the power drive field.

Morse Roller Chain on new equipment or for replacement will bring to roller chain power drives longer life, quieter operation, greater ruggedness, plus the flexibility of a conventional type chain. . . And remember, Morse Roller Chains cost no more than ordinary type drives!

RETAINS ITS LUBRICATING FEATURES

The patented design of the Morse round-pin chain builds an oil feed system in every link!

Oil placed on the rollers flows to the bushing surface, where spaced channels extend the full width of the bushing face, through bushing side plates. Oil follows along channels to the pin sideplates and to the pin, spreads over the entire pin and bushing contact surfaces.

The Morse man in your territory or Morse, Ithaca, will tell you all about the Morse round-pin, channel lubricated Roller Chain.

Instead of oiling the chain between side plates to reach wearing surfaces (as in conventional roller chains)—
Morse provides a path for oil from rollers, out through side plates to pin surfaces—where wear takes place.

SILENT CHAINS ROLLER CHAINS FLEXIBLE COUPLINGS KELPO CLUTCHES

MORSE *positive* DRIVES

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• Dependable because of uniform purity of composition, strength and adaptability they give definite assurance of finest fabric output.

*REG. U.S. PAT. OFF.

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ROYCE CHEMICAL COMPANY

Chemical Manufacturers

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